15c

The OIL WEEKLY

OIL and GAS ENGINEERING

FOR OIL AND GAS PRODUCTION AND PIPE LINE DIVISIONS

THE WEEK'S NEWS INTERPRETED

MAY 22, 1933
e 69 Number 10

"I Want a Valve...

- made of the best steel for the purpose.
- with castings free of "bubbles", sand holes and foreign matter.
- that has been machined accurately.
- with the toughness and strength resulting from scientific heat treatment.
- that has been properly inspected, assembled and tested.

...therefore I Buy HUGHES!"

HUGHES TOOL COMPANY

Service Plants: Los Angeles, Calif. Oklahoma City, Okla. Midland, Texas

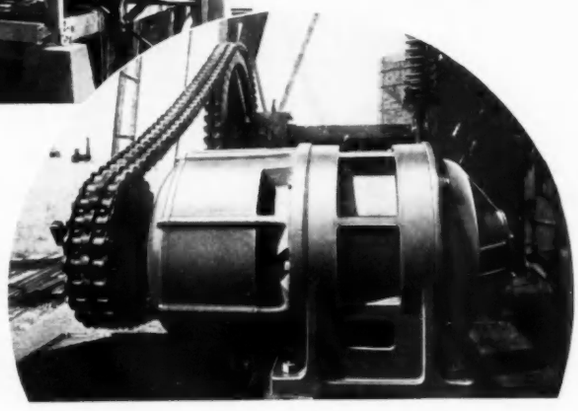
Main Office and Plant: HOUSTON, TEXAS

Export Offices: 19 Rector Street New York City

G-E gear-motor on a long-stroke pumping rig in a Houston, Texas, oil field

NEW

economies in slow-motion or long-stroke pumping with G-E GEAR-MOTORS



YOU can lower power, maintenance, and installation costs if you'll pump your stripper wells, or drive your long-stroke pumpers, with G-E gear-motors. These compact, low-speed drives, only slightly larger than standard motors, combine the economies of high-speed motors with accurately cut helical gears that run in a bath of oil. G-E gear-motors, available in a wide range of speeds and ratings, will meet the speed requirement of each well, and will hold exactly that speed.

The dependability and low maintenance costs of G-E gear-motors are indicated by the above installation on a long-stroke, low-speed pumping unit in a Houston oil field. The Cameron Iron Works, manufacturers of this pumping unit, say:

"The 30-hp. gear-motor that we purchased from you last year has operated day and night for a total of 176 days of continuous service without having a wrench on it. No adjustments were necessary on any part of the motor. The oil was changed twice; however, the old oil was apparently in good condition."

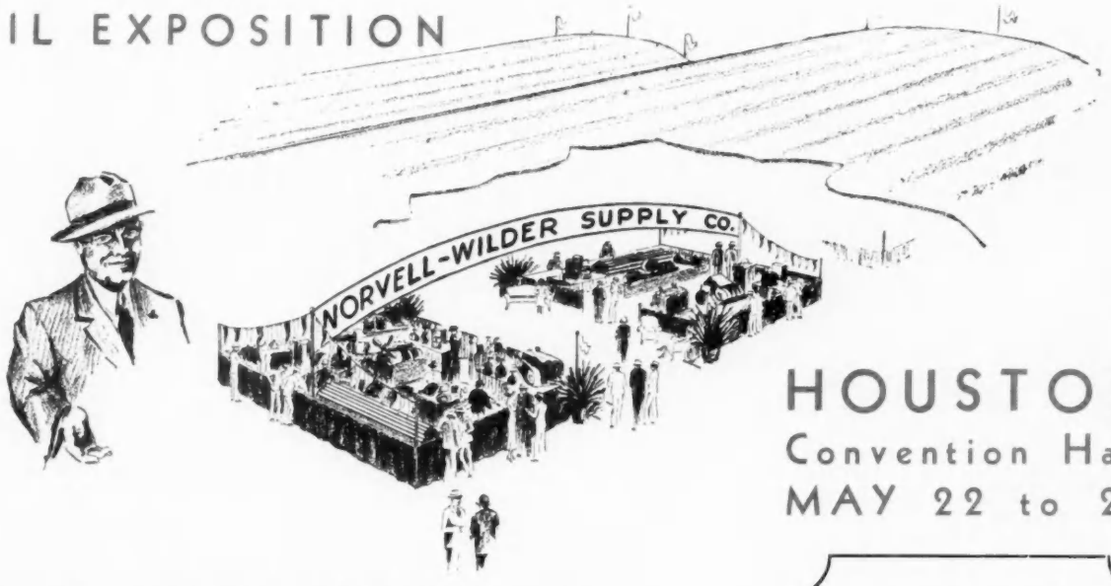
If you are considering slow-motion or long-stroke pumping, it will pay you to obtain full information about G-E gear-motors. Write for a copy of our six-page gear-motor bulletin, GES-764. Address the nearest G-E office, or General Electric Company, Schenectady, N. Y.

200-682

GENERAL ELECTRIC

The OIL WEEKLY. Issued weekly by the Gulf Publishing Co., 3301 Buffalo Drive, Houston, Texas. Subscription price $1.00 per year; 15 cents per copy. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879.

MEET
THE NORVELL-WILDER MAN
at the
OIL EXPOSITION



HOUSTON
Convention Hall
MAY 22 to 28

MAKE YOURSELF AT HOME in the
NORVELL-WILDER SECTION

1800 SQ. FEET OF SPACE
for your Comfort and Profit

TO PROVIDE FOR YOUR COMFORT we have set aside, in the Norvell-Wilder Section of 1800 square feet, the space of six booths as a reception room. Here you can sit down and rest as our guests.

TO PROVIDE FOR YOUR PROFIT, leading manufacturers of oil field tools which we have the pleasure and privilege of distributing to the great oil industry, are demonstrating their products in the adjoining twelve booths.

IN THEIR STRIFE FOR SUCCESS

Operators realize that their reputation as safe, dependable and skillful oil men depends to a large degree on the kind of equipment they use. To enable operators to choose superior, modern equipment, the Norvell-Wilder demonstration booths are provided.

DROP IN AND MEET THE NORVELL-WILDER MAN

S E E
the products of these exhibitors:

JONES & LAUGHLIN STEEL CORPORATION
•
DEAN BROTHERS COMPANY
•
A. LESCHEN & SONS ROPE COMPANY
•
KENNEDY VALVE MANUFACTURING COMPANY
•
KEROTEST MANUFACTURING COMPANY
•
HERCULES MOTORS CORPORATION
•
BAASH-ROSS TOOL COMPANY
•
CHAIN BELT COMPANY
•
QUIGLEY COMPANY, INCORPORATED
•
JEFFERSON UNION COMPANY
•
HEWITT-GUTTA PERCHA RUBBER CORPORATION

Norvell-Wilder
Supply Company

Distributing Points:

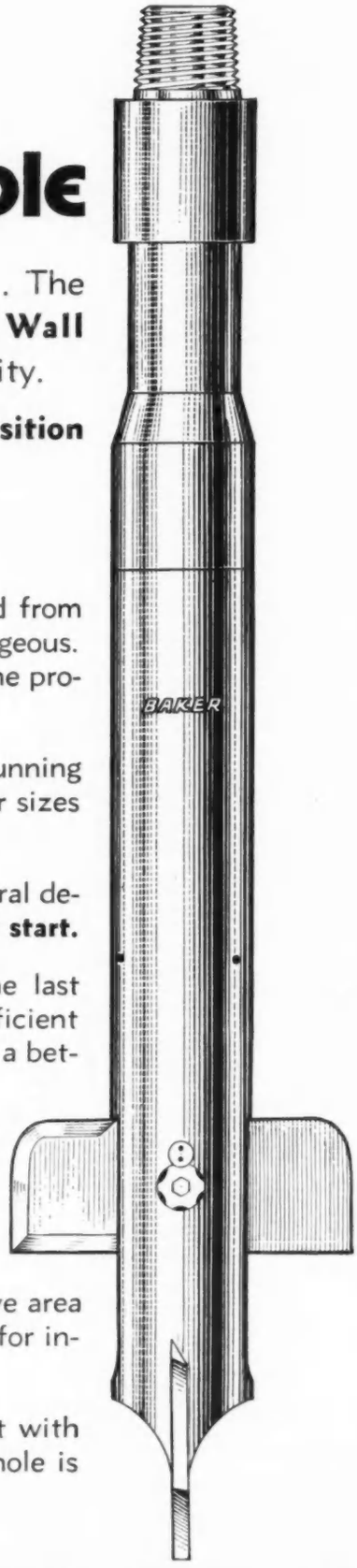
BEAUMONT HOUSTON SHREVEPORT FT. WORTH

Amazing

.... but inevitable

NOW comes this **New Baker Tool** . . . The **Baker Rotary Hydraulic Expansion Wall Scraper** . . . safe and of amazing capacity.

See Moving Exhibit at the Houston Exposition



Here is what it does

1. **Bringing in and Cleaning Up the Well:** Scraping the mud from the face of the productive oil zone is highly advantageous. Production can often be further increased by enlarging the productive area.

2. **Under-Reaming For Setting Liners and Casing:** Ease in running liners and in bringing in a scraped well is assured. Larger sizes of liners and casing can be run.

3. **Straightening Crooked Holes:** Deviation corrections of several degrees can be made by creating a new shoulder **for a new start.**

4. **Under-Reaming Before Cementing:** By under-reaming the last twenty-five feet to bottom, the shoe joint will have sufficient clearance to permit complete distribution of cement and a better bond with the formation.

5. **Cementing Combination String:** Ample clearance around side cementing ports of a suitable "cementing hook-up" is assured by under-reaming, giving the best possible condition for a successful C. P. job.

6. **Cleaning Out Old Wells:** Cleaning and enlarging productive area in wells by under-reaming is the best **mechanical** means for increasing production.

7. **When Bottom Water Shut-off Fails:** Drill out old cement with bit—then ream to size of original hole or larger. The hole is then ready for re-cementing.

BAKER OIL TOOLS, INC.

HUNTINGTON PARK, CALIFORNIA

COALINGA • TAFT • HOUSTON • OKLAHOMA CITY • TULSA • NEW YORK

THE OIL WEEKLY

MAY 22, 1933
VOLUME 69, No. 10

COPYRIGHT, 1933

Published Weekly by
THE GULF PUBLISHING COMPANY
HOUSTON, TEXAS

S. W. ROBINSON
Editor

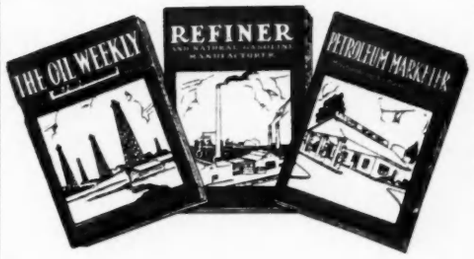
CONTENTS

Special Features

New President of the A. P. I. 8
Tulsa, Washington and East Texas 9
"Lack of Unamity in Industry Cause of Demoralization" 10
Economics Committee Report Pictures Decreased Demand 11
East Texas Order to Stand at Least Until After Court Hearing .. 12
"No Plans for Prorating Rest of Texas on Potential Basis" ... 12
Federal Oil Control Bill Provides No Dictator—But 13
Industrial Recovery Bill Would Enforce Codes, Modify Trust Law 14
Open Flow Test Is Practically Worthless in Gauging Reserves .. 16
T. V. Moore
Determination of Permeability from Field Data 19
William Hurst
Oil Equipment and Engineering Exposition Directory 39
Equipment Exposition Ready for Opening in Houston Hall ... 58

Regular Departments

Advertisers' Index 98
The Changing Panorama 7
Markets-Production-Crude Prices 53
United States Production Estimates 53
Crude Oil Price Quotations 56
Men in the Industry's News 60
California Fields 64
Oklahoma Fields 68
Kansas Fields 70
East Central Texas 73
South Texas 77
North and West Texas 71
Gulf Coast Fields 81
Louisiana Fields 84
Arkansas Fields 87
New Mexico and Rocky Mountains 90
Southeastern States 88
Michigan Fields 95
Eastern States 96
Squeaks from the Bull Wheel 98



SPECIALIZED OIL JOURNALS

Published by

THE GULF PUBLISHING COMPANY

R. L. DUDLEY, *President*
A. L. BURNS, *Gen'l Manager*
S. W. ROBINSON, *Editorial Director*
J. KENT RIDLEY, *Managing Editor*

NEW YORK: Room 323, 250 Park Avenue, Dick Swinsky, Manager.

PITTSBURGH: 902 Standard Life Building, W. W. Pigue, Manager.

CHICAGO: Room 1235, 141 W. Jackson Blvd. Tom W. Nelson, Manager.

LOS ANGELES: 416 Haas Building. W. E. Green, Manager.

TULSA: 1020-23 Hunt Building, J. F. Carter, Jr., Manager.

FORT WORTH: 205 W. T. Waggoner Building, H. H. King, Manager.

Issued Monday of each week. Single copies 15 cents. Subscription price: Domestic $1.00 a year, Foreign $1.00 a year. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879. Subscription restricted to those engaged in the producing and pipe line branches of the oil business or the manufacture and distribution of oil field supplies. Advertising rates on application.

CASING DRILL PIPE · TUBING LINE PIPE · J&L PIPE · SEAMLESS · WELDED

KEEP IN MIND
J & L MEMPHIS SERVICE

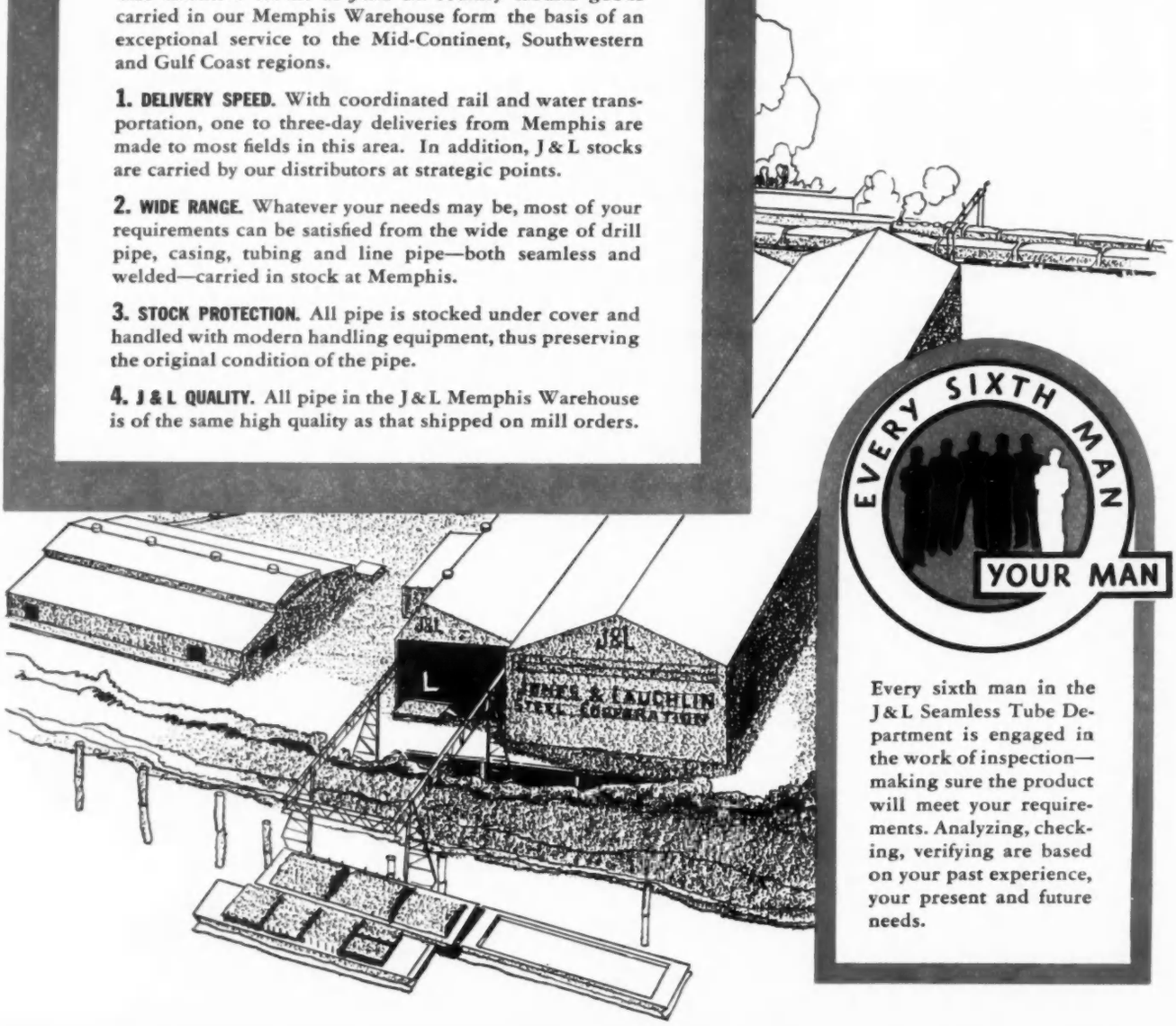
The extensive stocks of J&L oil country tubular goods carried in our Memphis Warehouse form the basis of an exceptional service to the Mid-Continent, Southwestern and Gulf Coast regions.

1. DELIVERY SPEED. With coordinated rail and water transportation, one to three-day deliveries from Memphis are made to most fields in this area. In addition, J & L stocks are carried by our distributors at strategic points.

2. WIDE RANGE. Whatever your needs may be, most of your requirements can be satisfied from the wide range of drill pipe, casing, tubing and line pipe—both seamless and welded—carried in stock at Memphis.

3. STOCK PROTECTION. All pipe is stocked under cover and handled with modern handling equipment, thus preserving the original condition of the pipe.

4. J & L QUALITY. All pipe in the J & L Memphis Warehouse is of the same high quality as that shipped on mill orders.



EVERY SIXTH MAN

YOUR MAN

Every sixth man in the J & L Seamless Tube Department is engaged in the work of inspection—making sure the product will meet your requirements. Analyzing, checking, verifying are based on your past experience, your present and future needs.

J&L STEEL

JONES & LAUGHLIN STEEL CORPORATION

American Iron and Steel Works

JONES & LAUGHLIN BUILDING, PITTSBURGH, PENNSYLVANIA

Sales Offices: Atlanta Boston Buffalo Chicago Cincinnati Cleveland Dallas Denver Detroit Erie Los Angeles Memphis Milwaukee Minneapolis New Orleans New York Philadelphia Pittsburgh St. Louis San Francisco

Warehouses: CHICAGO CINCINNATI DETROIT MEMPHIS NEW ORLEANS PITTSBURGH

Canadian Representative: JONES & LAUGHLIN STEEL PRODUCTS COMPANY, Pittsburgh, Pa., U. S. A., and Toronto, Ont., Canada

MAY 23 1933

VOLUME 69, No. 10 ©C1B 191507 MAY 22, 1933

THE OIL WEEKLY

FOR OIL AND GAS PRODUCTION AND
PIPE LINE DIVISIONS

ENGINEERING • NEWS • STATISTICS

The Changing Panorama

Oil Dictator?

News from Washington at the close of the week indicated that a great deal of thought was being given by at least some of the powers that be to the problem of federal control of the oil industry.

There seems to be a shying away from the term "dictator" but the general effect of the proposed plan would be a sort of master mind control of allowables in the different states with some kind of legislation set up by Washington to give the master mind in question a whip over the various states.

THE OIL WEEKLY believes that a great deal of good could be obtained from unified action but seriously doubts that anything will come of the proposal. Congress may grant the powers proposed in the bill—but some of those powers are not within the realm of Congress to give.

The Texas legislature last week gave a warning that it might not submit to a surrender to the federal government of powers which it recognizes as belonging to the state. And even if the legislature did give up the powers by a temporary legislative obeisance to the national government, it seems probable that somebody would take the matter into court.

As an emergency measure we hope that something can be accomplished that will beget the greatest good for the greatest number. But we have had our hopes dashed in the past.

American Petroleum Institute reports received from refining companies controlling 91.6 per cent of the 3,856,300 barrel estimated daily potential refining capacity of the United States, indicate that 2,243,000 barrels of crude oil daily were run to the stills operated by those companies, and that they had in storage at refineries at the end of the week, 32,880,000 barrels of gasoline and 123,308,000 barrels of gas and fuel oil. Gasoline at bulk terminals, in transit and in pipe lines, amounted to 20,334,000 barrels. Cracked gasoline production by companies owning 95.4 per cent of the potential charging capacity of all cracking units, averaged 478,000 barrels daily during the week. Page 55.

Comforting to the members of the Texas Railroad Commission is the thought that the East Texas field has a potential of 126,000,000 barrels per day, and consoling to them is the fact that J. S. Hudnall agrees with them that it matters not how fast the oil is recovered. But agreeing with neither are found engineers whose facilities and opportunities for observing are as fully broad. The potential figure quoted, arrived at after open flow of a number of selected wells, is admittedly fantastic and fortunately physically impossible of proof. So also is impossible of proof positive that more oil will be recovered by quick than regulated flowing. No identical pool can be produced by the two methods for comparison, due primarily to the fact that oil fields are in a manner individual. But to say that rate of flow makes no difference in ultimate recovery upsets a theory that the best informed talent has been approaching in theory and practice for some time past. A few weeks ago we had a discussion from Mr. Hudnall. Now we are pleased to have the other side of the argument from T. V. Moore whose opinion is concurred in by his associates on the engineering staff of Humble Oil & Refining Company. Page 16.

How Close to Space?

How much too much money is the oil industry spending on drilling wells sufficient to recover the oil it produces? Enough known oil reserves are so nearly individually controlled that a conservative program of spacing is possible in enough instances that engineering staffs can devote study to this question with the possibility that there will be a return for the effort. Despite regulations to the contrary, most fields are closely spaced, regardless of the economics involved. Then, too, study of the problem has been retarded by lack of satisfactory methods of measuring properties of the reservoir rocks. From recent studies it has been concluded that permeability greatly influences the ultimate recovery of oil, and that knowledge of the physical properties of both the fluid and the reservoir is essential in determining the spacing that will efficiently drain the reserve. Page 19.

—Bruce & Brehm

NEW PRESIDENT

AXTEL J. BYLES

SELECTION of Axtel J. Byles as president places leadership of the American Petroleum Institute in the hands of one of its competent and polished executives. Reasons for his selection may have been many but the oil country knows the former Tide Water-Associated Oil Company president because of two events. It was several years ago that he came to Tulsa as the speaker for the banquet of the Mid-Continent Oil & Gas Association and the impression he made then has kept the man of the Mid-Continent area on his side since.

More recently it fell to Mr. Byles to address members of the Texas legislature at Austin. It was the occasion of executives of the petroleum industry being invited to appear before the law makers when legislation was pending. The assembly listened to much that night and John Boyles of San Antonio paid his respects to the oil industry, its major companies and its executives in words that carried few smooth edges. Mr. Byles was next on the program and his few words caused the audience to realize that all executives of the major oil companies did not fit the description they had heard.

Mr. Byles is a product of the oil country. He was born within hearing distance of the Drake well. Titusville furnished his elementary education and Princeton took him after he had been to Lawrenceville. He was admitted to the bar after studying at Pittsburgh University. His first connection with the petroleum industry was an attorney for the Tide Water organization. From that post he moved upward to the presidency as well as other executive positions in Tide Water-Associated Oil Company and its affiliated concerns.

Tulsa, Washington *and* East Texas

THERE are instances when what does not happen draws as much attention as what does happen, and such was the case of the Mid-Year Meeting of the American Petroleum Institute in Tulsa, May 17, 18 and 19. While the membership and the directors remained in the Mid-Continent there was a move toward special legislation in Washington for control of the industry, and the oil fields of the United States were pouring out almost three million barrels of crude oil daily.

Still no resolution came from the director's room on either of these subjects. Whether it was and is the sense of the directors and the institute members that federal control is needed and three million barrels of oil daily is not a burden, is one way of looking at the situation. Another is that three million barrels will continue to be produced and that the Washington legislation will run its course regardless of what any set of men have to say on the subjects.

A lot was said about East Texas and its million-barrel flow but it was not official. Words and opinions on East Texas came along in the run of ordinary conversation plus a meeting of perhaps 50 oil producers from that section. Word came out of this conference, still not official, that many East Texas oil producers would like to close the field by voluntary action and await a day of a better price for crude oil. The conversation outside of any sort of meeting was toward the hope that the Texas Railroad Commission will get the approval of the federal courts as to the legality of its East Texas order before the end of the month; then the drop in bottom hole pressure in the field will be taken as evidence upon which to scale down the daily output to 450,000 barrels daily.

Concerned About Tax

Directors of the institute did get apprehensive concerning the proposal to increase the federal tax on gasoline to two cents per gallon as part of the source of revenue to pay the interest and retire the bonds that will be voted for the public works program. The resolution was a memorial to the President and to the Congress asking that gasoline be left to nurse its present taxes.

It was but a year ago that the institute met in Tulsa and the pessimism that drifted out of the city was sufficient to cast a pall over the industry and cause a sinking spell in quotations of oil securities listed on the exchanges. Conditions then measured as boom times when compared with prices of crude oil and gasoline today. Still nothing like the 1932 episode took place, and those attending the sessions could hear the echo of the tickers which were telling the value of oil stocks at two and three times the amounts of a year back.

This mid-year meeting of the Institute was not without its doubts but it must be classed as one carrying some optimism. It would be difficult, if not impossible, to give the reason. Still the opinion prevailed that the future will be better, regardless of the financial statements that are prepared for the second and third quarters of 1933.

On the score of age, cooperation outranks proration in oil affairs. The practice has been to use them as twins. But proration was ignored and cooperation had to carry the double burden this time. Judge C. B. Ames made good use of this work when he spoke extemporaneously. For he reiterated the place of cooperation in the industry and gave the hint that failure to cooperate to the extent of going before state conservation boards and the federal government with divergent views concerning one objective place the petroleum industry in a peculiar light.

The Institute got a new president in Axtel J. Byles, who should get the utmost of cooperation outside the Institute as well as in it. The new president will get his first opportunity to put his policies to work when he calls his first meeting of the board of directors.

Alcohol Threat

This meeting of the Institute made full recognition of the possibility of grain alcohol becoming a part of motor fuel in the United States. It had Dr. George Granger Brown of the University of Michigan to discuss the effect of such a blend. Dr. Brown discussed the technical phases of the subject and then got down to the meat of the proposition, for he singled out the manufacturers of alcohol and the makers of equipment for its manufacture as the beneficiaries of blended motor fuel.

But the hallways and after hours furnish most of the material for the observer and the price of gasoline had its inning here. For several years it has been the practice of concerns to make contracts with jobbers and guarantee these distributors a fixed margin of gross profit on gasoline. Regardless of the retail price of gasoline the jobber gets his gross on each gallon sold.

Now the price in the Middle-West, especially that half west of the Mississippi River is down to such a level that furnishing a jobber a gallon of gasoline with an assured gross profit amounts to assuring the refiner a definite loss. There was a lot of complaining but the price still stood when the sessions closed. It looks like a question of what concerns can stand the financial punishment.

If the gossip of the meeting is accurate, financial statements for this quarter and the next are going to require the use of a lot of red ink and the red figures are going to represent withdrawals from cash surplus, if any, as well as depreciation and depletion.

There was one big night of entertainment and the oil fraternity of Tulsa did itself proud as host.

The event was outstanding in that it demonstrated that even men with different opinions on a proper level for retail gasoline prices can come to a common standard of harmony when they break forth in song.

It may be that the men of the petroleum industry have joined other industries in hoping and believing that inflation and aggressive action in Washington will accomplish what industry has so far failed to do.

"Lack of Unanimity *in Industry* Cause of Demoralization"... *Ames*

Tulsa, Oklahoma, May 19.

CLIMAXING an otherwise uneventful meeting of the American Petroleum Institute at Tulsa, Judge C. B. Ames, chairman of the board of The Texas Company, and only recently resigned president of the Institute, placed the burdens of demoralization upon the lack of unanimity within the industry itself and urged a closer co-operation with state and federal regulatory bodies. Judge Ames told his audience that these governmental officials have a difficult task and that the task has not been lessened by the multiplicity of "Plans" presented by the divided elements of the industry.

Judge Ames addressed the general session of the institute Thursday afternoon in the absence of Axtel J. Byles, the newly selected president, who was unable to attend the meeting.

Approaching his subject with his customary clear-cut and forceful directness, Judge Ames accepted "Co-operation" as his theme and proceeded extemporaneously to outline the need of the industry to present a single and uniform plan for the guidance of these regulatory bodies in formulating and directing their various rules of control. He particularly appealed to that part of the industry represented by Kansas, Oklahoma and Texas, the three states which already have market demand statutes and stressed the need for oil men to define in their own minds what actually constitutes market demand. Continuing on this vein of thought the Judge said:

"If we continue this haphazard system of nominating future demand from the states, we will always be in difficulties. How can Texas say its part of the national demand is 1,600,000 barrels; Oklahoma ask for 1,000,000 barrels, and Kansas for 250,000 barrels without interstate conferences and a mutual assembly to work out the details? All of the production of Texas, Oklahoma and Kansas is not consumed within those states."

In asking for a more uniform front by the industry in approaching state and federal officials he said:

"State agencies are entitled to the solid judgment of the industry in fixing a program. And we have never presented a unified program."

Cooperate and Solve Problems

In conclusion Judge Ames urged that "At all events let us co-operate and thus solve our own problems," and said that failure to do so may bring the time when some dictator may be placed in charge to compel the industry to do what it should do—co-operate.

Earlier in the meeting the board of directors of the institute had elected Axtel J. Byles, president of Tide Water-Associated Oil Company, president of the institute to succeed Judge Ames, who had resigned to again join The Texas Company. Mr. Byles will serve the institute as a full time salaried president, having announced his resignation from his former connections and will hold office until January, 1935. It is understood his salary will be on the same basis as that of Judge Ames which was placed at $75,000.00.

Herbert L. Pratt, chairman of Socony-Vacuum Corporation, was elected treasurer of the institute, succeeding Mr. Byles who held the office for some time.

While the institute directors failed to take cognizance of the Texas situation or the prospects of a federal dictator in their official proceedings, no conversation between those attending the mid-year meeting could escape East Texas or the general proration situation. An unofficial meeting of East Texas operators was well attended by directors of the institute but no definite action was forthcoming from this gathering, although summary of the present East Texas problem was presented by R. E. Harwicke, attorney for the Texas Oil & Gas Conservation Association, and some concern was expressed over the possibility of further changes in the proration basis for other Texas fields to conform with the present East Texas basis.*

The technical sessions of the meeting were in keeping with the previous activities of the Production Division with particular interest being shown in the well spacing subject which is under the direction of a special committee, and operating data developed by the Bureau of Mines in co-operation with operators in the East Texas field.

Two papers on the latter subject were presented at Tulsa, giving exhaustive analysis of bottom hole samples from East Texas wells and the application of subsurface pressures and temperatures in East Texas flowing wells to reservoir and vertical flow problems. Both of these papers were presented by engineers from the Bureau staff.

The subject of well spacing has occupied the attention of the institute's engineering members for several years and additional data were presented at Tulsa, adding to the comprehensive collection of material that has already been developed. A particular noteworthy discussion on this subject was presented in the form of a paper by engineers of Humble Oil & Refining Company and published elsewhere in this issue† who have been making an extensive study of the determination of permeability from field data pursuing its previous policy.

Economics

One session of the production group was given over to the consideration of economic problems with papers read on such specific subjects as "The Relation of Price to Proration," "Economic Benefits of Proration," and "Labor Proration."

The refining division of the institute at its two sessions devoted its time to the study of new developments and methods in the manufacture of lubricating oils and to a symposium on cracking. Five papers were included in the group dealing with de-waxing methods in lubricating oil production three of which were first technical discussions of new processes. With present day demands for improved lubricants from crude petroleum, technical information dealing with developments in processes applicable in this field prove of great interest to refiners. In the cracking field, which was the topic of the second session of the refining division, progress was reported in technical advancement in the production of synthetic motor fuel from heavier distillates, fuel oils, and reforming of naphtha. The rapid development in the cracking field is of major importance to the industry because of the marked influence such progress may have on the demand for crude petroleum, in as much as continued improvement in cracking efficiency is bringing about each year additional percentage recovery of gasoline from the barrel of crude.

At a joint session of the Refining and Marketing Division of the Institute the time was devoted to a study of means for increasing consumption of such petroleum products as road building asphalts, furnace and other fuel oils, and Diesel fuels. In this co-operative work the two

*See page 12.
†Page 19.

branches of the industry plan more intensive study in recognition of the needed additional outlets or markets for petroleum products.

The marketing division of the institute turned to the proposed blend of alcohol with gasoline for motor fuel in its first session Wednesday morning. Dr. George Granger Brown of the University of Michigan, summed up the effect of such a federal law. His conclusion was that corn had better burned on the cob, since its growers will benefit more by such than by converting part of the crop into a motor fuel that will cost more than gasoline. The final session of this division Friday afternoon brought a discussion of the Code of Marketing Practices, following a paper by W. H. Ferguson, vice president of Continental Oil Company; M. J. Norrell, Magnolia Petroleum Company, offered a paper, "Meeting the Requirements of Our Customers," and W. C. Wenzel, Richfield Oil Corporation, spoke on credits.

Economics Committee *Report Pictures* Decrease in Demand

Tulsa.—Daily production of 2,282,000 barrels of crude oil along with withdrawal of 100,000 barrels daily from storage was recommended to the petroleum industry of the United States by directors of the American Petroleum Institute when the report of the committee of refinery statistics and economics was adopted the afternoon of May 17. Adoption of the report was among the first actions taken by the board when its membership gathered the first day of the mid-year session May 17, 18 and 19. The recommendation covers the six months from April to September 30, 1933.

The report is the work of the sub-committee, which is headed by W. A. Sinsheimer of Henry L. Doherty & Company. The committee on refinery statistics and economics is under the chairmanship of D. J. Moran, president of Continental Oil Company and also vice president of the Institute for the Division of Refining.

American Petroleum Institute Committee Summary of Forecast Of Demand, Economic Stocks and Required Supply

April 1, 1933 to September, 1933 (Forecast)
vs.
April 1, 1932 to September, 1932 (Actual)
(In Thousands of Barrels)

ITEM	SECOND QUARTER 1933		THIRD QUARTER 1933		SIX MONTHS	
	Total	% Change	Total	% Change	Total	% Change
MOTOR FUEL						
DEMAND:						
Total	102,100	— 7.3	109,700	— 4.0	211,800	— 5.6
Domestic	95,000	— 3.3	103,000	— 3.6	198,000	— 3.4
Exports	7,100	—40.5	6,700	—10.2	13,800	—28.9
STOCKS:						
Change during Period	— 5,026		—10,830		—15,856	
Beginning of Period	60,556		55,530		60,556	
End of Period	55,530		44,700		44,700	
SUPPLY:						
Total	97,074	—11.5	98,870	— 0.4	195,944	— 6.2
From Imports	—0—		—0—		—0—	
From U. S. Producers	97,074	— 8.1	98,870	— 0.2	195,944	— 4.3
Straight-run and Cracked	89,142	— 7.5	90,990	+ 0.7	180,132	— 3.5
Natural Gasoline	7,652	—14.9	7,600	— 9.8	15,252	—12.4
Benzol	280	— 0.4	280	0.2	560	+ 7.9
CRUDE OIL						
DEMAND:						
Total	214,340	— 6.5	216,680	+ 1.8	431.020	— 2.5
Export	7,200	—16.3	6,800	— 5.6	14,000	—11.3
Domestic	207,140	— 6.2	209,880	+ 2.0	417,020	— 2.2
Runs to Stills	203,340	— 6.8	206,080	+ 1.7	409,420	— 2.7
Used as Such	1,500	+ 9.4	1,500	+ 4.2	3,000	+ 6.8
Transfers to Fuel (California)	2,300	+84.6	2,300	+42.9	4,600	+61.1
STOCKS:						
Beginning of Period	341,708		.....		.....	
End of Period	.....		.....		.....	
SUPPLY:						
Total Required	214,340	— 6.5	216,680	+ 1.8	431,020	— 2.5
From Imports	7,000	—66.1	7,000	—32.6	14,000	—46.2

No Notice of Current Excess

The report took no cognizance of the current excessive output of crude oil. This pertinent paragraph, however, was in the presentation:

"Past studies and reports of the committee have not been accorded the importance which they have deserved and, as a result, the benefits, which could have been derived from them, have in a large measure been lost. They should not be ignored. No single company within the industry is qualified to prepare a better statistical report than the one now presented. It sounds a definite warning and is worthy of serious study, not only by the industry but in any program for the industry, which may be considered by the federal and state governments."

The consideration of crude oil production was undertaken by the sub-committee because this was necessary in determining the amount of gasoline that should be made during the six months. Concerning motor fuel storage withdrawals the sub-committee said:

"It is interesting, also, to note that in reaching economic fuel stock levels, no more gasoline need be withdrawn from storage between now and September than there was during the same period in 1932."

Motor Fuel Demand

Total motor fuel demand for the six months was set at 211,800,000 barrels, a decline of 5.6 per cent from the estimate for the corresponding period of 1932. Of this total demand 198,000,000 barrels was credited to domestic consumption and 13,800,000 barrels to exports. The reduction in export demand was set at 28.9 per cent, leaving an estimated drop of only 3.4 per cent in domestic demand.

East Texas Order *to Stand At Least Until After* Court Hearing

Austin, Texas.—The Texas Railroad Commission Tuesday issued an order extending indefinitely the allowable of the East Texas field on the basis of the order of April 23, under which the field is producing upwards of one million barrels daily.

The extension of the order followed a hearing Monday at which two witnesses were heard, one contending that reservoir energy is being wastefully dissipated by the current recovery, and the other that no waste would result from a flow approximately three times the current allowable.

The order of April 23 would have expired under its own terms on May 17, and it is now believed that any change will follow action of the federal court in a suit by Rowan & Nichols Oil Company scheduled at Fort Worth May 25. Both the commission and Attorney General James V. Allred believe that the order will stand up in this test. On advice of attorneys, the commission will not say whether the allowable is based on market demand or physical waste.

Of the two technical witnesses appearing at the hearing, one holds that water drive is the principal propulsive force while the other contends that three fourths of the energy is from expansion of the gas; one holds that a recovery of 325,000 barrels daily would best serve conservation, the other that 3,600,000 barrels per day would not cause waste. It was agreed that bottom hole pressure is declining rapidly, and several laymen advised that their wells are approaching the stage when pumping will be necessary.

The hearing developed little interest.

F. E. Heath, petroleum engineer, Sun Oil Company, Dallas, expressed the opinion that water is the principal propulsive force and advised lowering the output to permit the pressure to be maintained. He testified on direct interrogation by R. E. Hardwick, attorney for the Texas Oil and Gas Conservation Association.

Quoting figures of the commission, Heath said that production during the shut-down period averaged 111,000 barrels per day, and during the first 15 days under the present order, varied from 292,000 to 1,308,488 barrels daily, and a daily average of 803,640 barrels for the period. Allowable during the period was 799,000 to 805,000 barrels daily. He estimated that 1000 wells were shut in during the period and that their allowable amounted to 80,000 barrels daily.

Pressure Changes

Heath said that on April 6 average pressure over the field was 1334 pounds, which increased 44 pounds to 1378 pounds during the 18-day shut-down; on May 8, 15 days after the field was opened up, pressure had dropped 65 pounds to 1313 pounds. Production of 12 million barrels during that period indicates a pressure decline of 5.31 pounds per million barrels of production, as against a drop of .61 pounds per million barrels when the allowable was 325,000 barrels daily. Under the 325,000-barrel allowable, he pointed out, it would have required 37 days to produce the 12 million barrels and pressure decline would have been 7.3 pounds, meaning a loss of 57.5 pounds by reason of the increased rate of flow. From this he reasoned that the same energy would have been sufficient, under the slower recovery, to have produced 105 million barrels of oil.

Heath stated that should the field continue to produce at the rate of 800,000 barrels or more daily, he expects a majority of the wells to be on the pump by the latter part of July, as the bottom hole pressure will have declined to about 950 pounds. He estimated that the field will have produced about 69 million barrels by that time, and the energy expended would be sufficient to recover 600 million barrels of oil at the slower rate. Further, he estimated that about 525 million barrels of recoverable oil will be trapped off by the high rate of withdrawal causing unequal encroachment of water.

Assistant Attorney General Neal Powers on cross examination, pointed out conflict in Heath's statement now that the method used in making the potential test was not proper for distribution of potential on a per-well basis, with testimony previously given in a court hearing. Heath explained that his recommendation for an open flow test was based on the idea that the information thus obtained was to be used on an acre rather than per-well basis. His opinion was that only 690,000 barrels of water is replacing each million barrels of oil withdrawn, expansion of gas accounting for the difference.

J. S. Hudnall, Tyler consulting geologist, appearing as a witness for the commission, believes that three-fourths of the energy is derived from expansion of gas in the reservoir. He advocates allocation of production on a gas-oil ratio basis, and expressed the view that 15 barrels per hour per well would minimize the waste of energy—a recovery of 3,600,000 barrels daily. He said that most other engineers do not agree with him.

Hudnall stated that his theory that gas energy is the most important force in the field was based principally on the fact that the water table has advanced only four feet, while if water drive had been the salient factor the water table would have advanced 12 feet.

"No Plans for Prorating *Rest of Texas on* Potential Basis"... *Smith*

Austin, Texas.—Lon A. Smith, chairman of the Texas Railroad Commission, says that the commission has made no plans to prorate all Texas oil fields on the potential basis. He explained that the commission is contemplating no action of any kind, until the Rowan & Nichols suit attacking the present potential order in East Texas has been adjudicated.

However, Senator Will Pace of Tyler, pointed out that under the terms of the Daniels oil tax bill, it is practical for the commission to establish per-well allowables for every flowing well in Texas, and that he inserted an amendment for this purpose. This bill is now on the desk of Governor Ferguson, awaiting her signature.

The amendment to which Pace referred was that requiring that every flowing well in the state be equipped with a meter or separate flow tank, so that a daily report of the individual well's production could be furnished to the commission. The proposed statute also requires that such a report be made.

Should this bill become law, it is entirely within the realm of probability that the commission would establish allowables based on potential per well, providing that this method of allocating production is approved by the fed-

eral courts in the Rowan & Nichols case.

Previously, the commission has been unable to establish schedules of this nature because they lacked a sufficient force to gather the necessary data. With each well equipped with a separate meter, however, the problem would be reduced to mere calculation.

West Texas Proration Hearing Postponed

Austin, Texas.—Two west Texas proration hearings have been postponed by the Texas Railroad Commission.

The Reagan County hearing scheduled for June 2, has been postponed to June 8.

The Howard-Glasscock hearing set for June 3, has been postponed to June 9.

These hearings were originally postponed from the statewide hearing held in Austin on April 4. At that time operators from the area announced that they were not prepared to offer their evidence.

Allred Inquiring Into "Texas Oil Lobby"

Austin, Texas. — Attorney General James V. Allred stated Tuesday that he has been quietly conducting an investigation into activities of oil lobbies in Austin. This investigation, through courts of inquiry, were begun shortly after the Burns-Roeser fight.

Allred interrogated E. H. Eddleman, executive vice president of the Texas Oil and Gas Conservation Association, and stated that he intended looking into the activities of other associations which have been concerned with legislation in Austin.

Last Wednesday, Major J. R. Parten, president of the Independent Petroleum Association of Texas, sent the following wire to Allred at Wichita Falls:

"We are informed the opposing oil groups will demand an investigation of our association. We cheerfully request you to do this at your convenience. Our records will be open to you at any time, as our course will be only helped by letting the people know the principles for which we stand, and of our activities for their accomplishment. Our position is opposed to monopoly in any form which we think the people's interest requires. No integrated companies can belong to our association, either directly or by subterfuge under our by-laws."

Allred refused to divulge the nature of the inquiries he is making, or the results obtained.

Federal Oil Control *Bill Provides* No Dictator... But...

Washington, D. C., May 19.—Legislation designed to establish federal control over the oil industry today was presented to Congress by Senator Capper of Kansas and Representative Marland of Oklahoma, in the form of a revision of the proposed bill submitted to the President several weeks ago by Secretary of the Interior Ickes.

The measures, which are expected to be made a part of the industrial-recovery bill now pending, were submitted following announcement by President Roosevelt that he would transmit to Speaker Rainey and Vice President Garner all of the data accumulated by federal agencies since inauguration and the recommendations of the Secretary.

The President did not make any specific recommendation that oil-control legislation be enacted, but left it to Congress to determine whether it would provide a separate bill for the oil industry or cover it in the general industrial-recovery measure.

The Marland-Capper measures were identical and are, in effect, the bill prepared by Secretary Ickes with such changes as have since appealed to the administration and representatives of the oil industry.

Strong Provisions

While it was declared that the bill did not provide for a dictator, its provisions are so strongly worded as to leave little leeway for freedom of action. Strict provisions are carried for control of production and imports, and the Secretary of the Interior is given broad powers to carry out the purpose of the measure "to preserve and protect the correlative rights of the oil producing states and to assist them in the proper enforcement of their oil conservation laws."

The measure prohibits the delivery or acceptance for transportation in any manner of natural gas, petroleum or refined products produced or withdrawn from storage in excess of the market demand as determined by the Secretary, or in violation of any of the state conservation laws. No crude oil or refined products may be imported except under certificate from the Secretary, and so long as domestic production capacity is sufficient to supply the demand for domestic use and export trade, petroleum imports are to be limited to the daily average of the last six months of last year. Imports under bond of oil to be exported after processing or refining are exempt from restriction.

Washington, D. C., May 19.—President Roosevelt Friday transmitted to Vice President Garner and Speaker Rainey the data which has been secured on the oil situation, together with the recommendations of Secretary of the Interior Ickes are carried in the draft of an oil control bill recently submitted.

While the White House has not made known whether it is definitely in favor of separate legislation for control of the oil industry, it has been indicated that unless some bill like that of Secretary Ickes is provided it may be necessary to make special provision for petroleum in the industry control measure now pending.

The Secretary of the Interior is authorized to allocate to the various oil states their equitable proportions of the total demand, and should a state fail to accept the amount so set he is authorized to appoint an emergency committee, representing the public interest of such state, to prorate the state's production equitably to the pools, areas or common sources of supply, and is himself to make such proration if the committee cannot agree.

Minimum Price

To prevent premature abandonment of wells of settled production the Secretary is to establish a minimum price to less than the average costs of such wells and is directed to take into consideration the interests of the purchasing and consuming public and the oil industry as a whole in determining when abandonment would be premature.

The investigation of any monopolistic practices, investigation of the feasibility of divorcing pipe lines from affiliated refineries or holding companies, devising practical means for attaining such divorce and initiation of rates and regulations on transportation and storage, the establishment of minimum rates of pay after conference with employers and employes, power to seek mandatory or other injunctions against violators, recommendations to the states that they enact uniform conservation laws, including control of drilling and producing, retention under-

ground of crude petroleum whose production would be in excess of the market demand, equitable apportionment to owners of a common source of oil and authorization for unit operation are other provisions set forth in the bill.

A tax of 50 cents per barrel in addition to all other taxes is levied upon all petroleum produced in excess of the market demand as established by the Secretary. A tax of one fourth of a cent per barrel is levied upon all petroleum produced in accordance with the market demand, the proceeds of this tax to be used in providing funds to meet the expenses incurred in enforcement of the measure.

Penalties Provided

Fines of from $1000 to $5000 with imprisonment of one year to five years are provided for individual violators of this act, while corporations violating it are to be subject to fines from $5000 to $10,000 for each day of such violation.

It was explained by Congressman Marland that either of the states of California, Texas or Oklahoma alone can produce enough oil to meet the total domestic demand at the present moment and for a short space of time.

"Continued uncontrolled production," he said, "will mean closing many fields in other states, destroying hundreds of thousands of small wells whose ultimate production will be greater than the total ultimate production of the 30,000 wells whose open flow is now destroying the market for the 300,000 older wells.

"To assist the states in carying out the purpose of their conservation laws, Congress should authorize someone to act as umpire between these various states who after consultation with the authorities of the several oil producing states might allocate to each of the oil producing states its fair share of the general market, in this way protecting the correlative rights of the oil producing states in the enjoyment of a common market, for the purpose of protecting our oil fields in this country, Congress must also limit the amount of oil that can be brought into our market from foreign countries."

Simultaneously with introduction of the oil control bill, Representative Rayburn of Texas submitted a resolution calling on the Interstate Commerce Commission to make an investigation and prescribe rates for transportation of oil and its products by pipe lines. Doubtful whether legislation is needed to provide for such rates, Mr. Rayburn said, it is desired that the commission test its authority under the present law.

Industrial Recovery *Bill Would Enforce Codes,* Modify Trust Laws

Washington, D. C.—The licensing of all manufacturers and distributors engaged in interstate business, in order that the government may readily enforce adherence to codes of fair competition which are to be adopted by the various industries, will be resorted to under the industrial recovery bill introduced in Congress May 17 by Senator Wagner of New York following receipt of a special message by President Roosevelt.

Declaring the existence of "a national emergency productive of widespread unemployment and disorganization of industry, which burdens interestate commerce, affects the public welfare and undermines the standards of living of the American people," the measure defines the policy of Congress to be "to remove obstructions to the free flow of interstate commerce which tend to diminish the amount thereof; and to promote the organization of industry for the purpose of cooperative action among trade groups, to induce and maintain united action of labor and management under adequate governmental sanctions and supervision, to eliminate unfair competitive practices, to reduce and relieve unemployment, to improve standards of labor, and otherwise to rehabilitate industry and to conserve natural resources."

To this end, the industries of the country are to develop codes of fair competition which, upon approval by the President, are to constitute the legal requirements for the industries, with penalties of up to $500 in fines for violations.

Following adoption of a code, all members of the industry affected, engaged in interstate commerce, will be required to secure licenses, with a penalty of a fine not exceeding $500 or imprisonment for not more than six months, or both, for failure to do so.

Incorporated in the measure is the proposed public-works program of the Administration, to be financed by a $3,300,000,000 bond issue for the servicing of which new taxes to raise a revenue of $220,000,000 a year will be required. These taxes have not yet been decided upon, but in his message the President asked that provision be made for their reduction or elimination as fast as increasing revenues become available.

Explaining the purpose of the bill as a "great cooperative movement throughout all industry" to obtain wide re-employment, shorten the working week, pay a decent wage for the shorter week and prevent unfair competition and disastrous overproduction, President Roosevelt pointed out that employers alone could not achieve this, because such action "increases costs and thus permits cut-throat underselling by selfish competitors unwilling to join in such a public-spirited endeavor.

"One of the great restrictions upon such cooperative efforts up to this time has been our anti-trust laws," the President declared. "They were properly designed as the means to cure the great evils of monopolistic price fixing. They should certainly be retained as a permanent assurance that the old evils of unfair competition shall never return. But the public interests will be served if, with the authority and under the guidance of government, private industries are permitted to make agreements and codes insuring fair competition. However, it is necessary, if we thus limit the operation of anti-trust laws to their original purpose, to provide a rigorous licensing power in order to meet rare cases of non-cooperation and abuse."

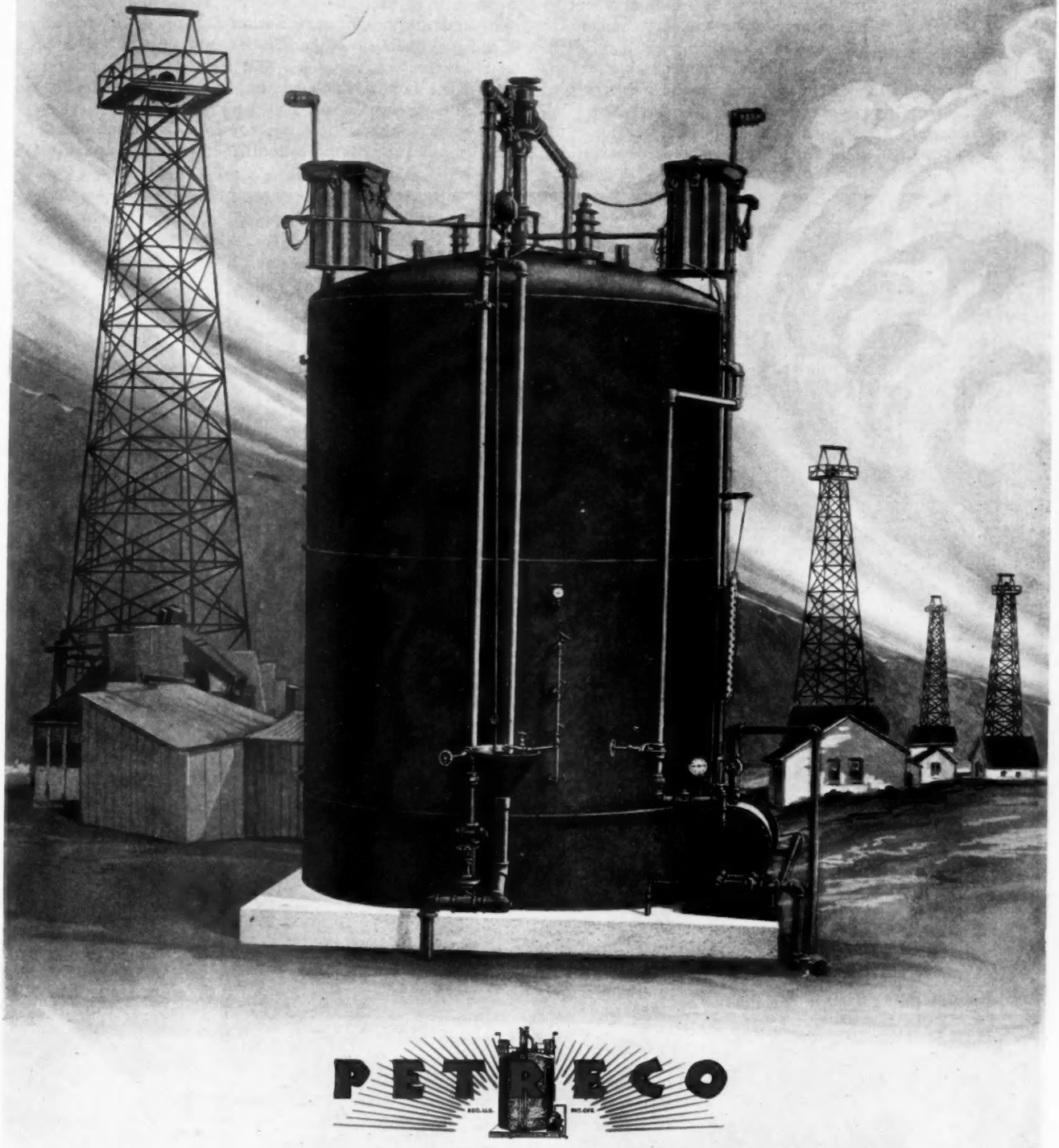
The oil industry "faces the alternative of either federal control through a special bill which specifically protests the interests of the American industry and especially the small producer or else an entirely different type of control under the national industries recovery measure," it was declared by Wirt Franklin, president of the Independent Petroleum Association, in commenting upon the Administration measure.

Franklin Comments

"The national industries bill, drafted to cover all industry," he pointed out, "naturally does not include the following provisions which are of vital importance to the independent petroleum producer: Definite limitation of foreign imports, authorization of price-fixing, maintaining stripper well production, the allocation of the market demand among the oil-producing states and among the fields or pools and the storage in such states and also among producers and owners of storage; and the requirement that would-be purchasers, refiners, etc., must file with the Secretary written requests for the amount of oil they wish to purchase, import, or withdraw from storage."

The shelving of the federal oil-control bill, bringing the industry under the industrial recovery bill, he charged, will place the stronger companies in a strategic position "to dictate their will to the whole industry."

That It is Essential is Well Established by More Than Two Decades of Uninterrupted Service



PETRECO

The Electrical Process for Dehydrating Crude Oil Emulsions.

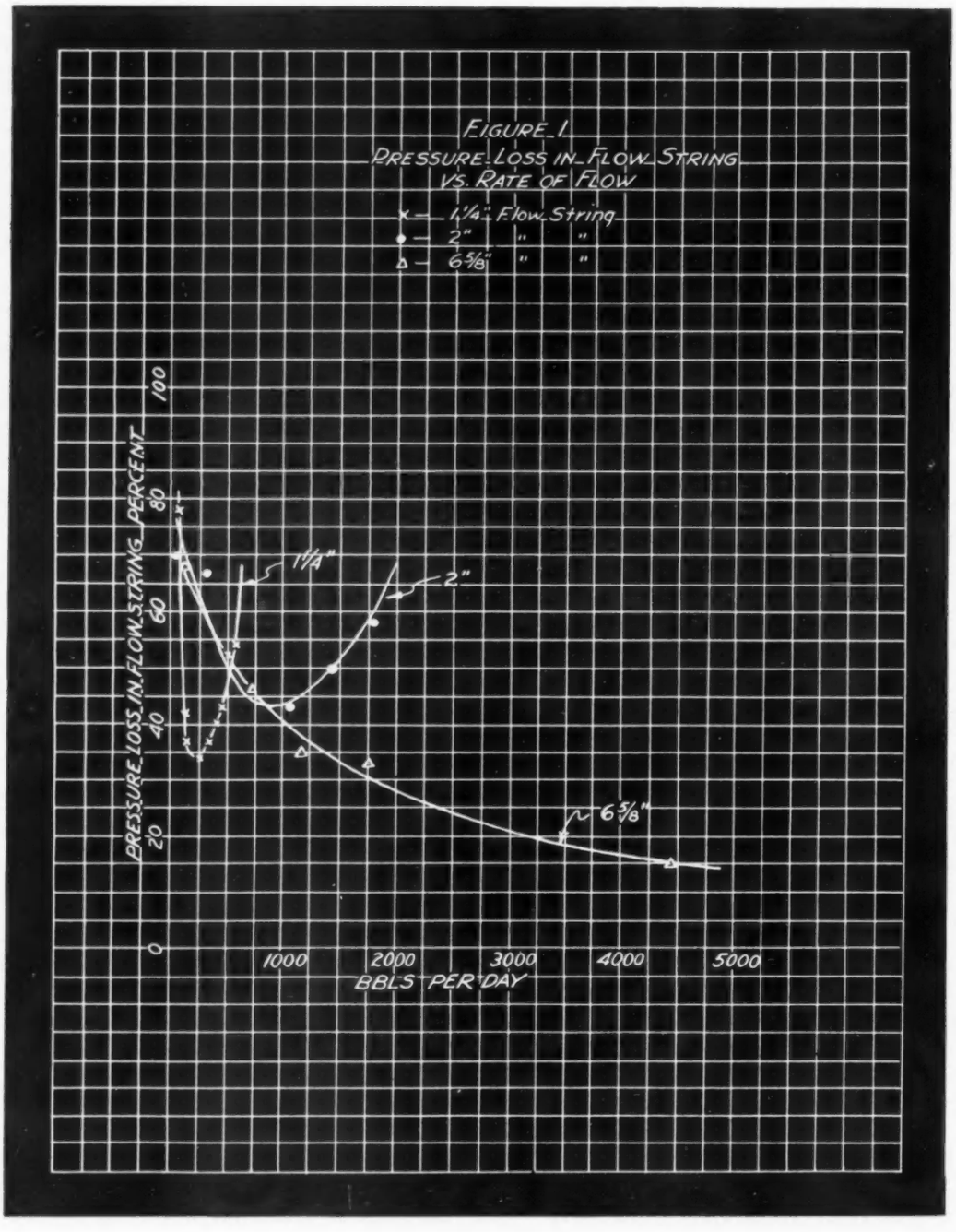
PETROLEUM RECTIFYING COMPANY OF CALIFORNIA
Security Title Insurance Building., Los Angeles. Branch: Houston, Texas

Open Flow Test Is Practically

T. V. MOORE

THE OIL WEEKLY of May 1, 1933, carries an article in which J. S. Hudnall discusses the factors which influence the potential production of wells. It seems that although Mr. Hudnall's data are incomplete, his correlations unsound and his conclusions fanciful, the article, is presented in such a manner as to command a considerable interest and may serve to mislead many men in the industry who are not thoroughly familiar with the problem. Mr. Hudnall's conclusions are summarized in his statement: " . . the potential of an oil well is definitely related to something more than sand penetration, mechanical equipments, bottom hole pressure, and permeability. The maximum variation due to any one of these factors is only a few per cent and the maximum variation due to all of them combined is probably less than 50 per cent. Since the potential tests themselves vary . . . 833 per cent, there must be a very large factor which has not been discussed. This factor is oil reserve."

In view of this article it seems that a discussion of the true significance of the potential of oil wells and the fac-



Worthless in Gauging Reserve

Humble Oil & Refining Company

THE accompanying discussion of the significance of potentials of oil wells has been brought about by publication in these pages on May 1, of an article by J. S. Hudnall. Mr. Hudnall, a member of the firm Hudnall & Pirtle, Consulting Geologists, has spent practically all the time since its discovery in the East Texas field. He has appeared frequently as an expert in hearings having to do with proration matters, and last week at Austin said on the stand that many engineers do not agree with his opinions.

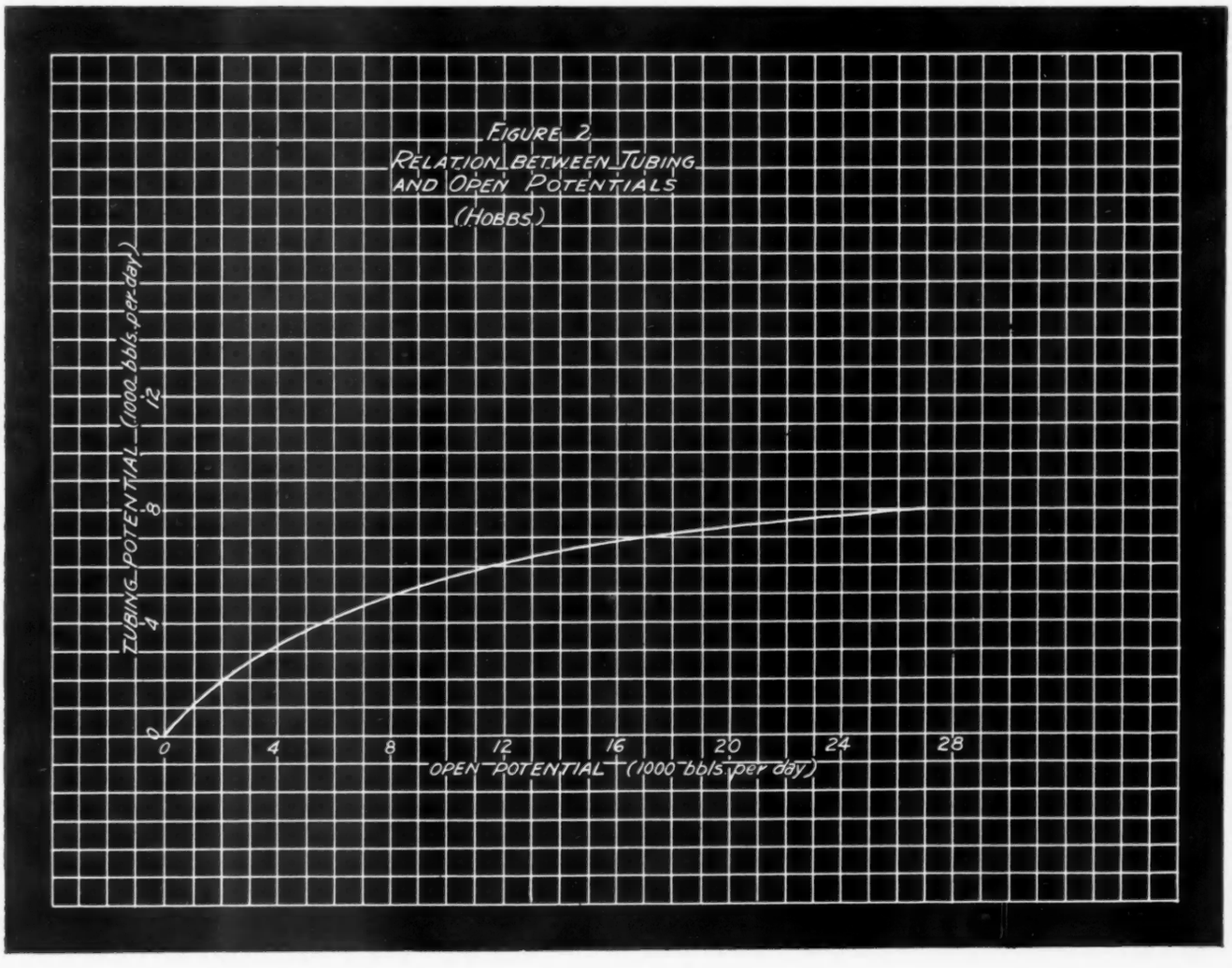
The writer of the accompanying article and his colleagues do not agree with him.

The editors are glad to be able to present both sides of this discussion, and the columns are open for such other comment as may tend to clarify a matter which apparently is of great import to the industry at this time.

tors which determine it would be in order. Such a discussion is presented in this memorandum.

With reference to the specific tests recently made in East Texas, it is believed that these data are practically worthless in estimating the oil reserve in the various parts of the field. The tests do not correlate with the sand penetration alone because of the variations in permeability, reservoir pressure, and other factors. Similarly, they do not correlate with the reservoir pressure alone because they are influenced to a greater extent by penetration, permeability, and other factors. They do not correlate with the oil withdrawal because the encroaching water is keeping pace with the oil production, and except for those areas in the western portion of the field which have been flooded with water, the sand in East Texas is saturated with oil to substantially the same extent as it ever was.

In any case, however, a test of short duration reflects conditions in the immediate vicinity of the well, and gives little indication as to how production will be maintained throughout the life of the well. A field drilled up with a



well spacing of one well to 10 acres may show twice the potential which it would were the spacing only one well to 20 acres, yet the difference in ultimate recovery may be very small indeed. Similarly, in comparing tracts in a field, erroneous conclusions may be drawn. Two tracts may have the same area and the same reservoir characteristics and hence the same reserve. But if one has twice as many wells, short time open flow tests would indicate twice as great a "potential" on the closely drilled tract. Yet the reserve would not be twice as great.

The field "potential" of about 126,000,000 barrels per day is little short of absurd, and is infinitely more fantastic than the figure of 5,000,000 barrels per day for the Yates field.

An oil well is a complex hydraulic system. It consists of the reservoir rock itself, the well and the flowstring, and the surface equipment, such as chokes, flow lines, and gas separators. The oil and gas are contained in the reservoir under pressure and this pressure tends to drive the oil through the well against the resistance offered by the various parts of the system. At any rate of flow, a certain amount of the total available pressure is lost in each part of the system and the sum of the three losses is equal to the total reservoir pressure.

In an open flow test, the resistance of the surface equipment and chokes has been reduced to as low a value as possible, and the rate of flow measured, but in such a test the resistance of the sand and the flowstring cannot be changed. The results of such a test are influenced to a great degree by the flowstring as well as the properties of the sand. The flowstring acts in exactly the same manner as a choke, and the restriction of production caused by it depends upon its size. The result of this is to make all large wells equipped with similar flowstrings appear to have practically the same productive capacity on an open flow test.

Some idea of the effect of the flowstring size may be obtained by referring to Figure 1. The data for this curve are from the results of tests made on three wells in the Yates field equipped with 1¼-inch, two-inch, and 6⅝-inch flow strings. It shows the percentage of the total reservoir pressure used in overcoming the resistance of the flowstring plotted against the rate of flow. It will be observed that in the smaller strings, at high rates of flow most of the pressure is lost in the flow string because of friction, so that a great back pressure is held upon the face of the sand, which restricts production proportionately. The conclusion seems inevitable that potential test on a large well is a better measure of the capacity of the flowstring than of the ability of the sand to yield oil.

This conclusion is substantiated by the results of the work of the engineers at Hobbs, who determined by tests the potentials of the wells in this field through three-inch tubing and through both tubing and casing. The relationship between the potentials taken in this manner is shown in Figure 2. From this curve, it appears that no well in this field can make much more than 8000 barrels of oil per day when flowing through the tubing, although there are many wells which can produce over 20,000 barrels daily through both tubing and casing.

It is interesting to compare the effect of the method of taking potentials on the indicated relative productive capacity of wells. From Figure 2, it is seen that two wells whose potentials through both casing and tubing are 24,000 barrels and 12,000 barrels would have tubing potentials of 7800 barrels and 6200 barrels respectively. Thus, the productive capacity of one well would be twice as great as that of the other when the potentials were measured in one way, and when a different method of testing was used, the results would indicate that the large well was only 26 per cent more productive.

All engineers realize that the flow string has some effect, but many claim that the difference is negligible when the strings used in the potential test are approximately the same diameter. However, it is estimated that the potential of a well limited only by the capacity of a 2½-inch flowstring is about twice that of a well limited by the capacity of a two-inch string.

The open flow test was designed to measure properties of the sand rather than the properties of the flow string. In some cases, it is a fair index to these qualities, even though the extraneous factors which influence it too often mask the result. The resistance which the sand offers to the flow of oil depends upon the thickness of the sand body, the penetration, the diameter of the hole, and the permeability. In oil wells, the resistance to flow is very nearly inversely proportional to the product of the permeability and the sand penetration. Because of the differences which may exist in either of these, any attempt to correlate potentials against only one factor is foredoomed to failure. By measuring the pressure of a well at the face of the sand under both flowing and shut in conditions, the productivity factor may be determined. This factor is the number of barrels of oil produced per day for each pound difference between the shut in and flowing pressure. This factor is nearly directly proportional to the product of permeability and penetration, and is a far better index to the productive capacity of a well than does the open flow test. It is true that the open flow test has been used in the past to measure the productive capacity of wells. In some areas, it probably will always be used, just as the horse will always be used somewhere as a means of transportation. But as an accurate measure of "oil reserve," the open flow test is inadequate. Wherever an important decision is to be made, a better method of gauging productive capacities should be used.

The federal court has criticized previous orders of the Texas Railroad Commission for East Texas which allocated the allowable on a per well basis, because such orders gave to some individuals oil to which they were not entitled, and denied to others their proper share of the field's production. In the language of the court a per-well order "takes from one owner to give to another." Any order distributing allowable production by a scheme which does not give proper consideration to acreage and sand thickness, even though based primarily on the results of potential tests is subject to the same criticisms as one distributing the allowable solely on a per well basis.

Where the results of potential tests are available, they can be properly considered in distributing the allowable production, provided that the importance of these tests is not unduly emphasized. Most engineers agree that acreage, sand thickness, and reservoir pressure are factors of fundamental importance to be considered in making a fair distribution, and that from a practical standpoint, acreage is perhaps the most important single factor. By giving proper weight to the factors enumerated, an order can be written that will distribute the allowable in proportion to the recoverable reserves belonging to the various properties in the field.

A distribution of allowable among the leases in a given field in proportion to the recoverable reserves of the leases is recognized as being fair and just. Similarly, considering the state as a whole, it seems unfair that any field should be granted an allowable which would be out of line with its relative recoverable reserve.

Determination of Permeability From Field Data

T. V. MOORE, R. J. SCHILTHUIS and WILLIAM HURST
Humble Oil & Refining Company, Houston, Texas

ABSTRACT

THE study of drainage of oil reservoirs has long been held back because a satisfactory method for measuring certain important properties of the reservoir rock has been lacking. One of the most significant of these properties is the permeability, which influences to a great degree the productive capacity and effective drainage areas of wells; and has, therefore, a direct bearing on such problems as the evaluation of producing properties and economic well spacing. In this paper a method for calculating this quantity from field tests made on flowing wells is developed, and a few of the possible applications of information of this type are discussed. The results of using the method on field data suggests that a wider spacing of wells than that usually considered necessary will adequately drain a field if the production rate is kept low.

Paper presented at Third Mid-Year Meeting, American Petroleum Institute, Tulsa, May 18, 1933.

PERMEABILITY is a measure of the facility with which fluids can flow through a porous rock. It may be expressed as the number of cubic feet of fluid per day which will flow through a cube of rock, any side of which is one foot long, when the pressure at the downstream face is one pound per square foot lower than that at the upstream face.

Permeability[1] has a great influence on the ultimate recovery from oil fields; since it affects the drainage area of wells, the effectiveness with which gas energy and water drive can be used, the rate at which oil may be produced, and many other factors which control the efficiency of drainage. The old-fashioned open-flow test[2] to determine the so-called "potential production" of wells is no more than a crude attempt to measure the productive capacity of the reservoir rock, which is governed to a great extent by the permeability. Engineers have realized the importance of this quantity, and attempts have been made to devise means of measuring it. One method which has been used is the examination of cores in the laboratory.[3] The data obtained in this manner are in many instances very useful, and where the variations in relative permeability in a series of sands is desired it is perhaps the only practical method available. Nevertheless, it is highly desirable to know the average permeability of the entire sand section around a well to fluids as they exist in the reservoir. For this purpose laboratory investigations are inadequate. In the light of the present knowledge of the subject it is impracticable to compute from laboratory data the permeability of the complex mixtures of oil and gas encountered in oil reservoirs. Furthermore, many important wells were not cored, and the opportunity for laboratory examination has been lost. Even when the entire producing formation has been carefully cored, the recovery is often poor. For these reasons it is desirable to devise a simple method for determining average permeability from tests which can be made on producing wells.

Where the absolute permeability is not desired, the productivity factor[4,5] and the specific productivity are useful. The productivity factor is defined as the number of barrels per day which a well produces for each pound difference in pressure between the well and the surrounding reservoir. It is determined by first measuring the sub-surface pressure of the well when it is shut in, then flowing the well for sufficient time to allow the pressure to become substantially constant, and again measuring the sub-surface pressure. The rate of production, divided by the difference between the shut-in and the flowing pressures, is the productivity factor. This factor is almost directly proportional to the product of the permeability and the effective sand thickness of the well, and is a better measure of productive capacity than the "potential production" obtained by the nearly obsolete open-flow test. The specific productivity is the productivity factor divided by the number of feet of sand exposed to the well. Thus, it is a better index to the permeability than the productivity factor. Nevertheless, these quantities are not absolute measures of permeability, and cannot be used in the same manner in predicting the performance of wells.

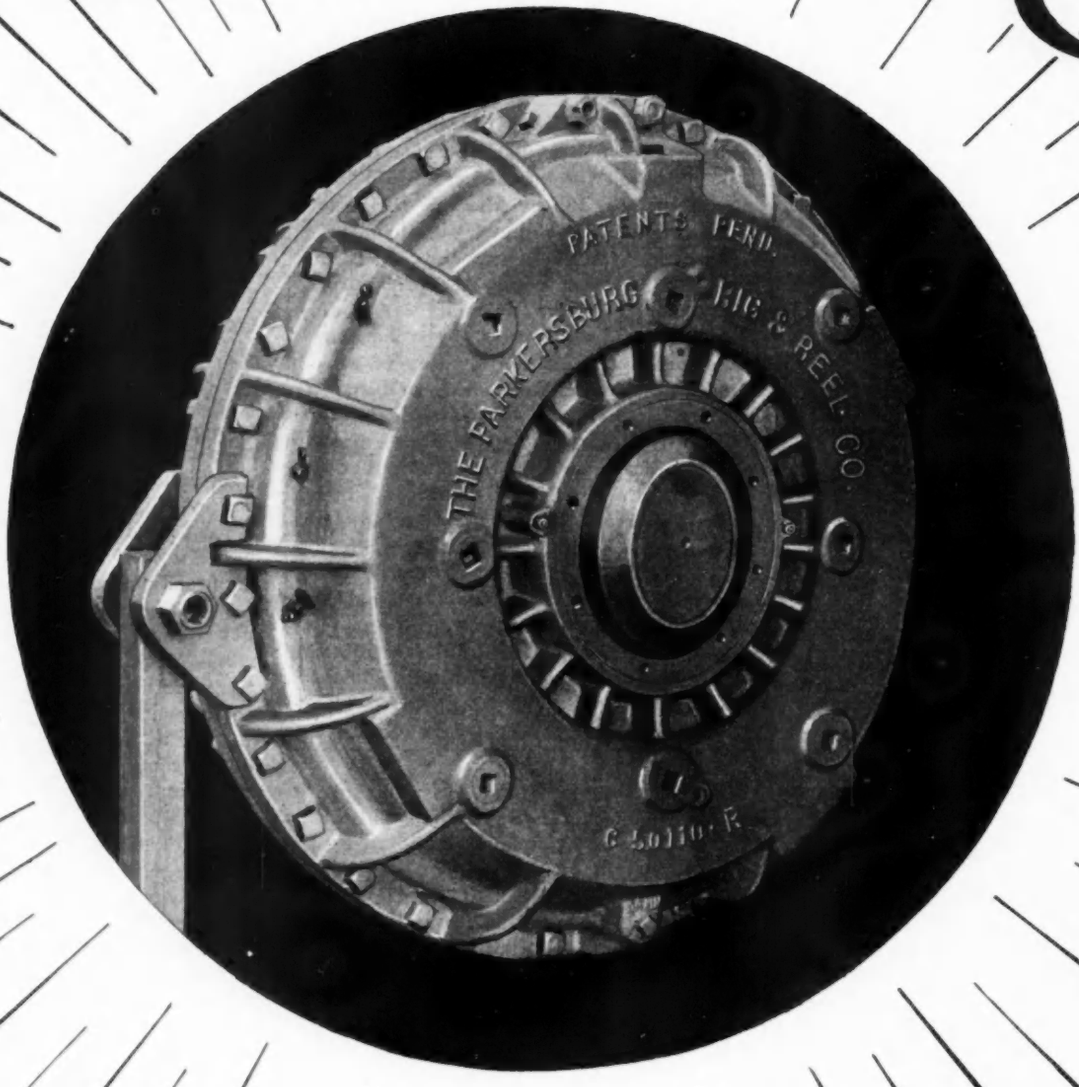
Actually, an oil reservoir is a highly complex system, containing sands of varying properties, and subject to many irregularities and disturbances in its operation. It is obviously impossible to determine the properties of each layer of sand or the effect of each lens of shale in the reservoir. But, for practical purposes, the average permeability of the sand around a well may be considered to be the permeability of a uniform sand which gives the best approximation to the performance of the actual reservoir. With this in view, it is necessary to determine the manner in which the ideal well in a uniform sand will behave; and then, by comparison with the behavior of the actual well, the average permeability may be found.

Mathematical Analysis of the Performance of an Ideal Well in a Uniform Sand

The mathematical problem is one of flow in the unsteady state, i.e., one in which the pressures and velocities throughout the reservoir are continually changing. When the well is opened, the pressure at the well bore is lowered —causing the fluid near the well to expand and flow toward the well. The loss of fluid from the reservoir lowers the pressure in the more distant portions of the reservoir, permitting the fluid in those portions to expand and flow to the well. Thus, the drainage area of the well is continuously enlarging and the pressure is lowered at progressively greater distances from the well.

In order to set up the mathematical equations necessary

Announcing



The PARKERSBURG

PARKERSBURG

A NEW-
HYDROMATIC BRAKE

PATENTS PENDING

SINCE the days of Colonel Drake the Petroleum Industry has relied upon the mechanical brake. Some minor improvements in appearance and design, leading to better performance, occasionally have been introduced. But there has been no change in the *principle* of braking action—*until now.*

We predict the Hydromatic Brake will astound the industry. It is a radical departure in design . . . it brings the first real change in braking principle to oil-field operations . . . it is, in fact, an *invention* of an amazing character.

We are proud to recommend the Hydromatic Brake to your further investigation.

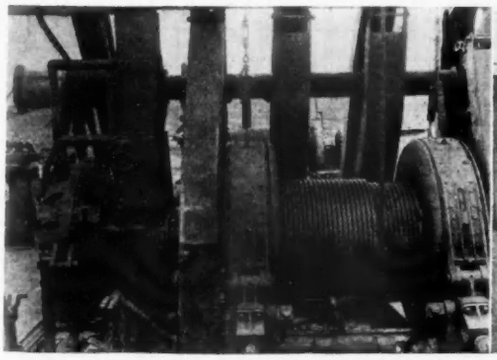
Ask for Booklet G-5-33

The Parkersburg Rig & Reel Co.

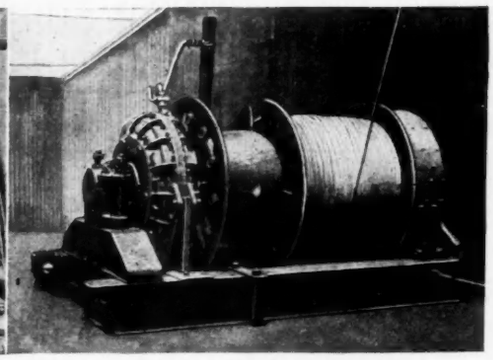
Jno McCrawford

PRESIDENT.

Motion Pictures of the Hydromatic Brake in Demonstration Test stopping 50-Ton Load dropping from derrick top, 90 ft. in 14 seconds
50 Ton Load on way to Derrick Top
Test Load dropping 90 ft. in 14 sec.
Load stopped with little effort
Perfect Control! Note Watch under load
Glass of Water and Egg balanced for ride
Smooth Performance. No Jar to Egg or Water
No "Romping on the Brakes"



The Hydromatic Brake on Rotary Draw Works at Iowa, Louisiana



The Hydromatic Brake on a Sand Reel Installation in West Texas

RIG AND REEL Co.
WEST VIRGINIA

to predict the performance of the hypothetical well in a uniform sand, certain assumptions must be made. These are as follows:

1. The permeability, porosity, and sand thickness are uniform throughout that portion of the sand body that can be influenced by the well.

2. The velocity of fluid flow at any point is directly proportional to the drop in pressure per unit of length along the path of flow.

3. The fluids expand as the pressure is lowered, the volume of the fluids increasing a certain definite percentage for each pound decrease in pressure.

4. The well bore is cylindrical, and penetrates completely the sand section.

In most wells these assumptions are sufficiently reasonable representation of the facts to permit their use—although whenever too serious discrepancies between the assumptions and the known conditions exist, the results of the calculation must be modified accordingly.

ratios is one which is proportional to time; but which involves also the size of the well bore, the permeability and porosity of the sand, and the compressibility of the fluids. It is:

$$\frac{K\theta}{\phi c a^2}$$

(for nomenclature see Exhibit "A"). The second is one which considers the pressure, the rate of production, and the sand thickness, as well as the permeability and compressibility. It is:

$$\frac{KH\,[1 - e^{-144C(P_R - P_W)}]}{q_R C}$$

which reduces to:

$$\frac{KH\,(P_R - P_W)}{q_R}$$

for those cases in which the compressibility or pressure drop is very small. The size of the reservoir which can be

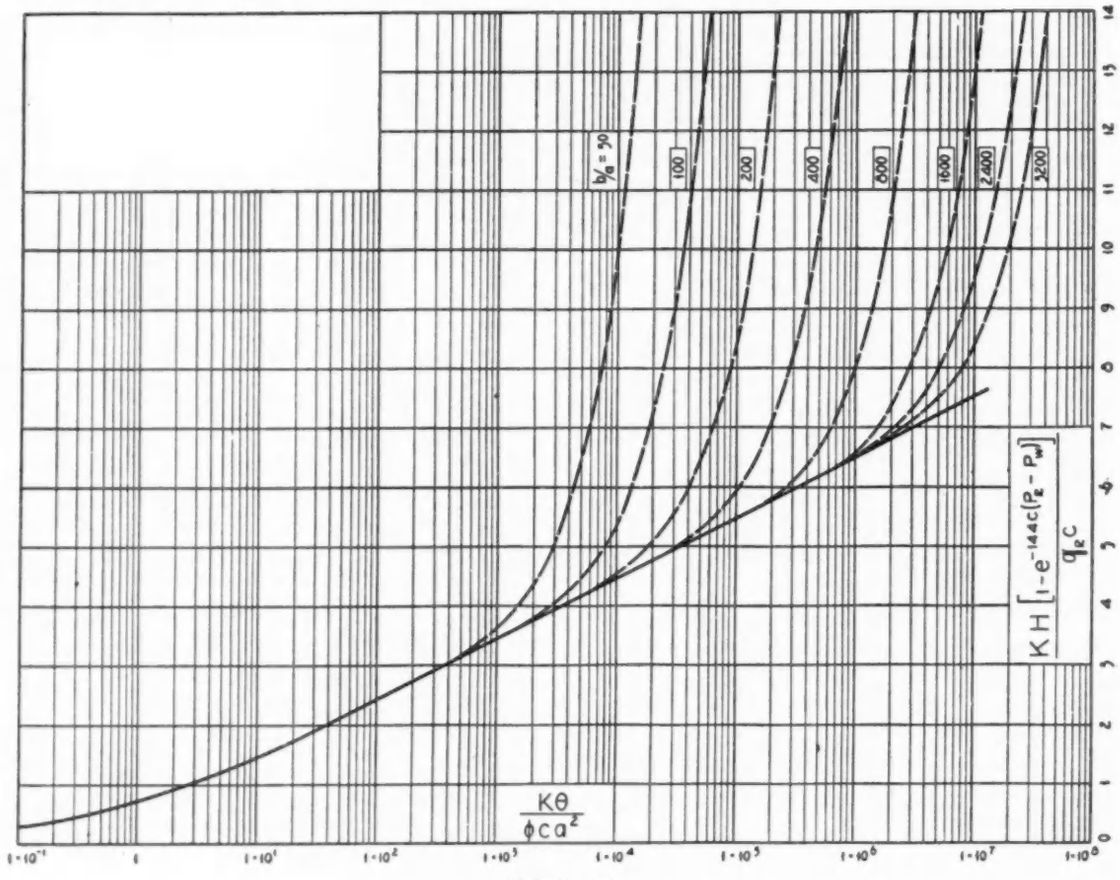


FIGURE 1
Constant well pressure

On this basis the relation between the many quantities involved has been derived for two cases: 1, that in which the pressure at the well remains constant; and, 2, that in which the rate of production is constant. Further details as to the formulas derived are presented in the appendix. It will be seen that these equations are complex, and that their solution must involve a great deal of computation. Fortunately, however, their solution may be presented as a series of curves by plotting certain ratios of the important variables, so that the final answer for any type of reservoir may be obtained without recourse to any mathematics more complex than multiplication and division. The first of these

drained ultimately by one well also affects the result, and this is expressed by the ratio of the radius of the outer limit of the reservoir to the radius of the well, i.e., **b/a.**

For the case in which the pressure at the well is constant the relationship between these quantities is shown in Figure 1. It will be observed that during the early stages of production the curves for all sizes of reservoirs coincide, forming a main stem. However, the oil which can be produced is limited by the size of the reservoir; and, as production is continued, the area of influence cannot extend beyond the limits of the reservoir. Hence, these curves branch off from the main stem at the point at which the

limitations as to the size of the reservoir first begin to affect the producing conditions at the well. The branches on the curves for various reservoir sizes show the manner in which this occurs. This curve, is, in effect, a general production-decline curve.

Figure 2, which is similar to Figure 1, shows the same relationship for the case in which the rate of production is constant. This curve is a general pressure-decline curve. For convenience these curves are presented on logarithmic coordinates. In order to make clear the relationship which they represent, the variables of Figure 2 are plotted on ordinary coordinates in Figure 3. It will be observed that this curve closely resembles the curve of pressure decline in an actual flowing well. Another curve showing the relation between time, pressure, and cumulative production is shown in Figure 4, for the case in which the production rate is constant. This curve is used in calculating the permeability. In it the ratio:

$$\frac{K\theta}{\phi c a^2}$$

is plotted against:

$$\frac{Q_R}{H\phi a^2 [1 - e^{-144C(P_R - P_W)}]}$$

From these curves the effect of the properties of the reservoir on the production and pressure decline of wells may be deduced. These properties are: 1, porosity; 2, compressibility of the fluids; 3, sand thickness; 4, extent of the reservoir influenced by one well; and, 5, permeability.

Porosity and compressibility are most important in determining the total amount of oil which the reservoir will ultimately yield, but have comparatively little effect on the pressure drop caused by a certain rate of flow. Sand thickness is an important quantity, and should be known to establish the permeability. The accuracy of the calculated permeability depends upon the accuracy with which the sand thickness can be established. As it is not always necessary to know the permeability exactly, the fact that it is often difficult to establish the sand thickness with precision is not a serious objection. The extent of the reservoir influenced by a given well becomes important only in the later stages of production, and does not influence the behavior of the well at the start of production. Permeability is the most important factor in determining the pres-

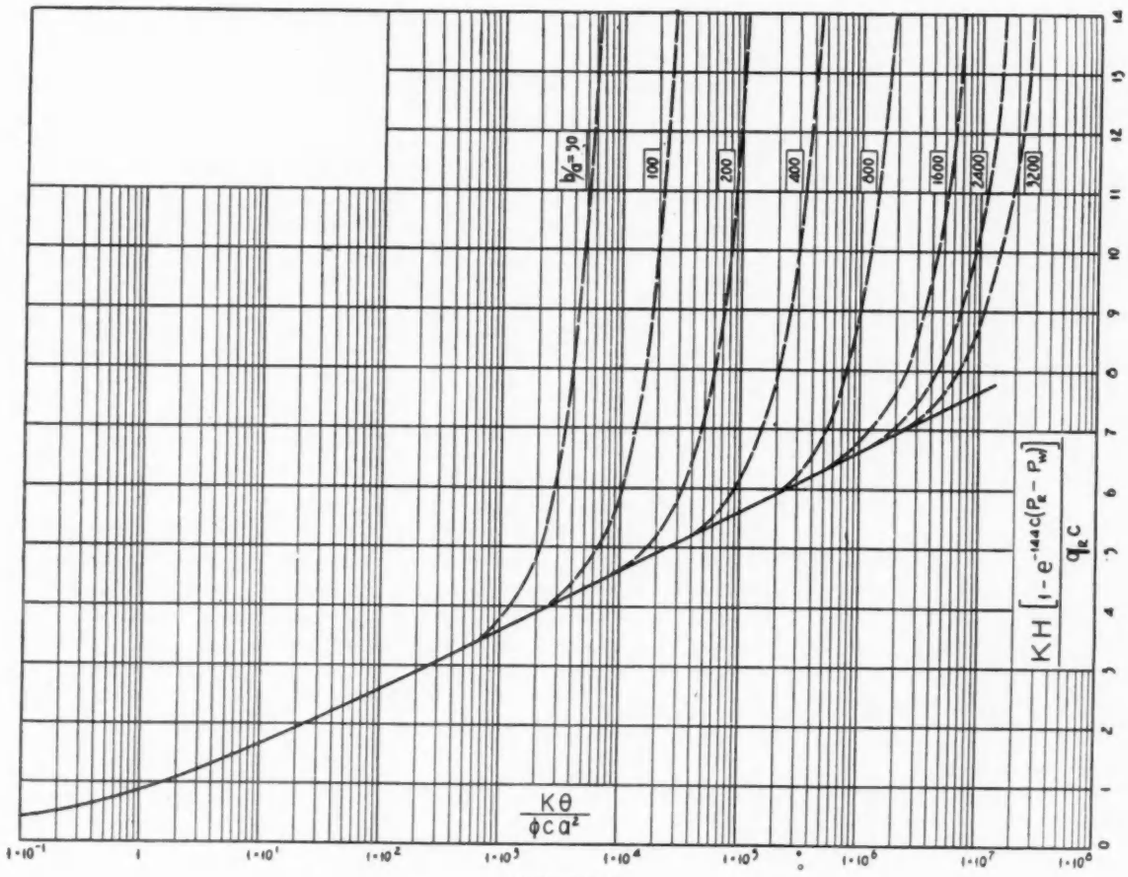


FIGURE 2
Constant production rate

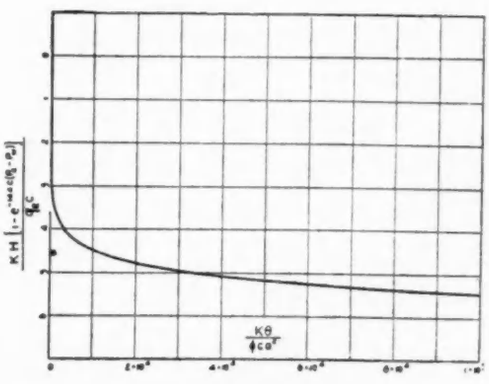


FIGURE 3
General pressure-decline curve. Constant production rate.

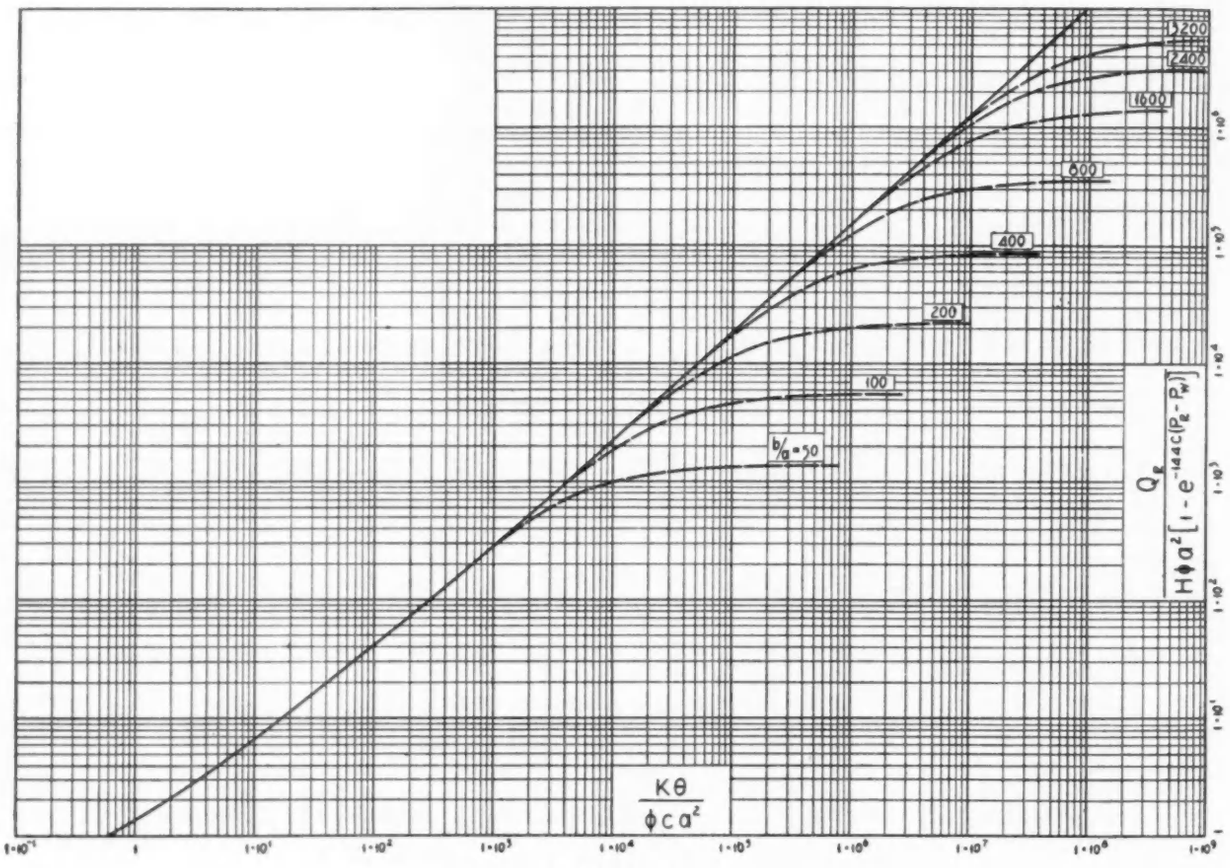


FIGURE 4
Cumulative production — Constant production rate.

sure decline at the well; and is, therefore, that quantity which can be calculated from the well data with greatest accuracy. In the following discussion the methods of obtaining and interpreting the data required to calculate the permeability will be considered.

Interpretation of Field Data

The data required to calculate the permeability by this method are as follows:

1. Thickness of producing sand drained by the well.
2. Diameter of the bore hole.
3. Sufficient information regarding the properties of the oil and gas to permit the approximate calculation of the compressibility.
4. The data from a flowing test on the well, consisting of the following:
   a. The data for the "draw-down" curve, i.e., the variation in the pressure at the face of the producing sand with time during the test.
   b. The variation in casing pressure.
   c. The oil and gas production during the test.

In determining the draw-down curve the well is first shut in for sufficient time to allow the reservoir around the well to reach a state of substantial equilibrium. The time required for this varies greatly from well to well, but in most cases four hours is sufficient. The shut-in reservoir pressure is observed, and the well is opened on a choke of convenient size. With either a recording or multiple-reading sub-surface pressure gage, sufficient pressure determinations are made to establish the curve of pressure against time. During the test the oil and gas production are measured at intervals with as great accuracy as possible, and frequent observations of the casing pressure are made. In Figure 5 the draw-down curve and other essential data of a typical test are plotted. It will be observed that the production rate is not quite constant, and that the casing pressure shows that a considerable portion of the oil produced came from the casing of the well, and not from the producing sand. Obviously, only the oil produced from the formation during the test should be considered in these calculations.

In order to make the data comparable to the case for which the mathematical analysis is made, corrections must be applied to the observed data. In order to adjust the

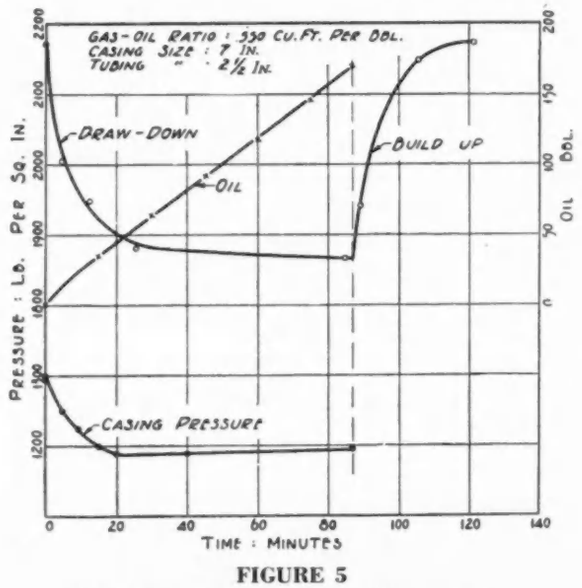
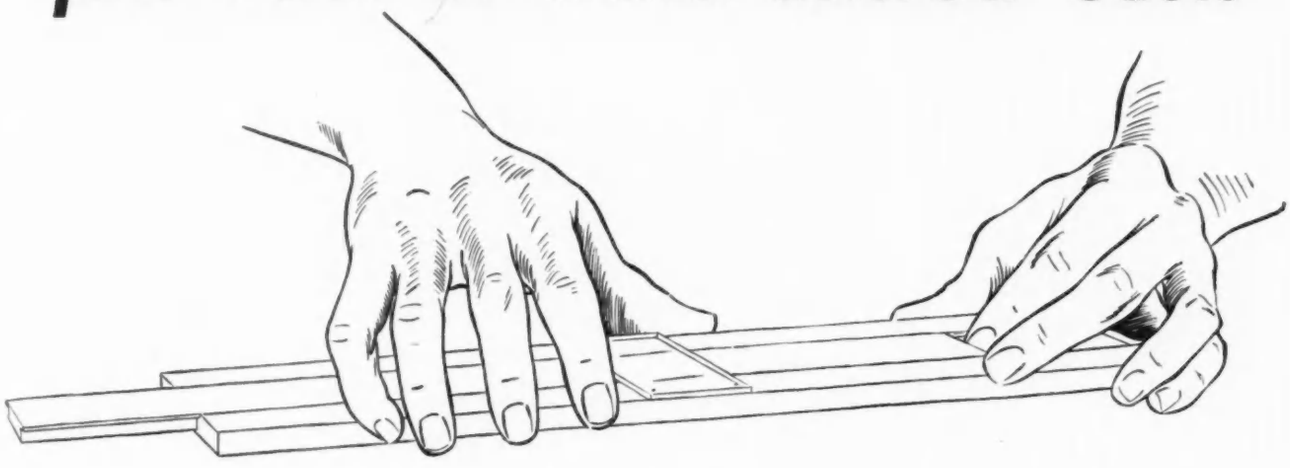
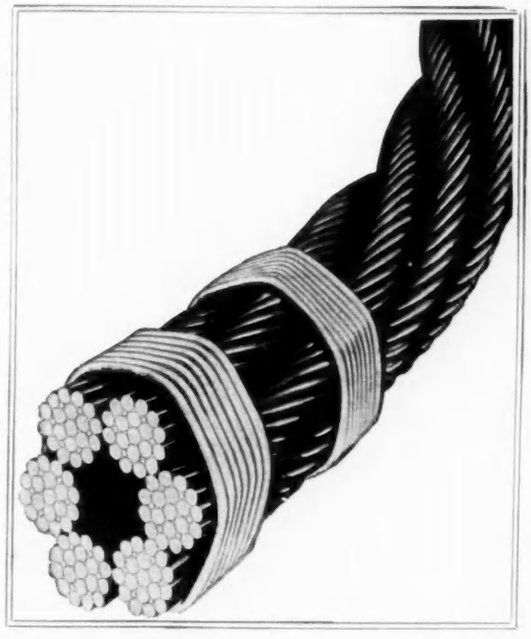


FIGURE 5
Typical draw-down and build-up curves.

Let's get down to a *per-foot-of-hole-drilled* basis



The price you pay for Wickwire Spencer Wire Rope means very little to you. The fact that it is made of special mild steel, is flexible, uniform and resists external abrasion and wear perhaps means something, but ...the important feature is that Wickwire Spencer Wire Rope will definitely equal and probably lower your per-foot-of-hole-drilled cost. Use alone has proven this fact. Why not let one of our representatives tell you about low rope costs under conditions similar to yours?



ALSO WISSCOLAY PRE-FORMED ROPE

Wickwire Spencer manufactures all sizes and types of wire in PRE-FORMED as well as in standard lays. WISSCOLAY is the name given to Wickwire Spencer Pre-formed Wire Rope. It has Wickwire Spencer Quality.

WIRE ROPE
by Wickwire Spencer

Send for this free Wire Rope book. It will prove of great value.

Wickwire Spencer Steel Company, 41 East 42nd Street, New York City
Branch offices and warehouses: Buffalo, Chicago, Worcester, Tulsa, San Francisco, (Pacific Coast Headquarters) Los Angeles, Portland, Seattle. Export Sales Dept., New York City

total production for the oil which is produced from the casing, the fluid level is calculated from the difference between the casing and reservoir pressures and the density of the oil. From the area of the annular space between the casing and tubing, the change in fluid level can easily be expressed as barrels of oil produced from the casing. By subtracting this quantity from the total production at several times during the course of the test, a curve of oil actually produced from the reservoir can be constructed. In Figure 6 the data of a test are given, showing the production curve corrected for the oil produced from the casing. It will be observed that during the first few minutes the rate of production is not constant, and this condition should also be corrected. This may be done by using as *abscissa* not the actual time, but the ratio of total production up to the observed time to the production rate finally established. For instance, if a well had produced 50 barrels during the first 65 minutes of a test and settled down to 50 barrels per hour, the pressure observed at the end of 65 minutes would not be plotted against the total elapsed time, but against the one hour of time which would have been required if the production rate had remained constant at 50 barrels per hour throughout the test. In Figure 6 a simple graphical method of accomplishing this is indicated.

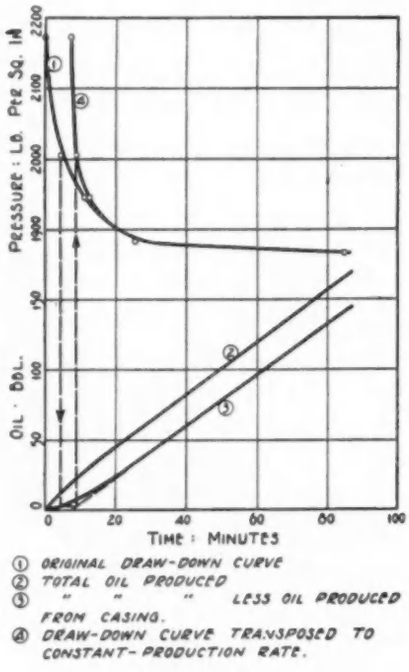

PRESSURE : LB. PER SQ. IN.
OIL · BBL.
TIME : MINUTES
① ORIGINAL DRAW-DOWN CURVE
② TOTAL OIL PRODUCED
③ " " " LESS OIL PRODUCED FROM CASING.
④ DRAW-DOWN CURVE TRANSPOSED TO CONSTANT-PRODUCTION RATE.

FIGURE 6
Transportation to constant-production rate.

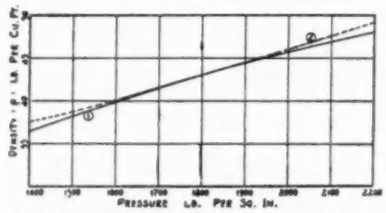
Having made these adjustments for the data, the next step is to calculate the compressibility of the fluids in the reservoir. The fluids are generally a mixture of oil and gas, and in these calculations the compressibility is that of the mixture. The fluids are assumed to expand in such a manner that a definite change in pressure causes a certain percentage of change in the density. Mathematically, this is expressed by the equation:

$$\frac{\rho_R}{\rho_W} = e^{144C(P_R - P_W)}$$

which is the same as:

$$C = \frac{2.3[\log_{10}\rho_R - \log_{10}\rho_W]}{144(P_R - P_W)}$$

In other words, the compressibility is defined as the change in the logarithm of the density divided by the change in pressure. Whenever actual data on the density of the oil and gas mixture over the required pressure range are available, they should be used. Otherwise, the density of the mixture may be estimated from the gas laws, the solubility of the gas, and the approximate increase in volume of the oil due to the solution of gas. The assumption that the density of the fluid varies according to the equation given is not an exact one; but is, over fairly wide pressure ranges, a reasonably close approximation. Figure 7 shows the



② Calculated from solubility and gas laws.
③ Calculated from equation $\rho = \rho_R e^{-144C(P_R - P)}$

FIGURE 7
Density-Pressure Curves.

curve of density against pressure for a mixture of oil and gas calculated from the solubility of the gas and the gas laws, and compares this curve to the one calculated on the basis of the above equation. It will be seen that the two curves give substantially the same relationship over a fairly wide range of pressures.

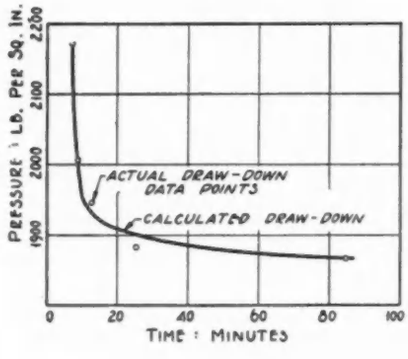


FIGURE 8
Actual and calculated draw-down curves.

Porosity, another quantity which must be estimated, is best obtained by laboratory examination of core samples; but may be estimated from measurements made on similar reservoirs. Fortunately, a large error can be made in estimating either the porosity or compressibility without seriously affecting the calculated permeability.

With these data available, the next step is to compute the ratio:

$$\frac{Q_R}{H\phi a^2[1 - e^{-144C(P_R - P_W)}]}$$

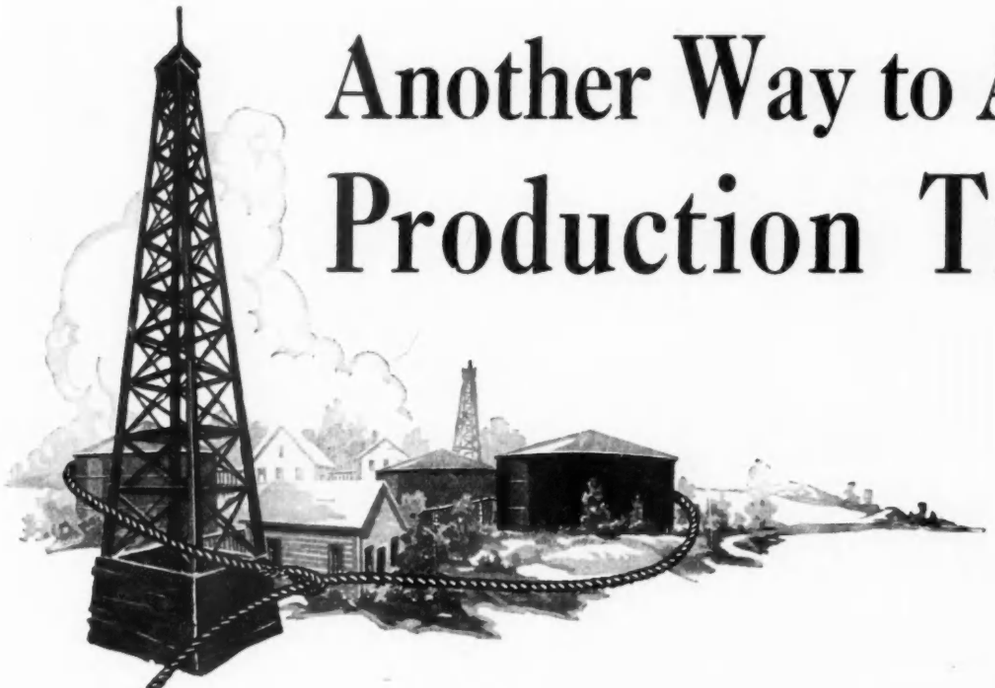
and to read the value of:

$$\frac{K\theta}{\phi c a^2}$$

from Figure 4. By substituting the values of **c**, ϕ, $\mathbf{a}^2$ and θ, the value of **K** is readily computed.

The theoretical pressure-decline curve may be calculated in a similar manner from Figure 2. In Figure 8 the actual data of the pressure decline are compared with the com-

Another Way to Avoid a Production Tie-Up

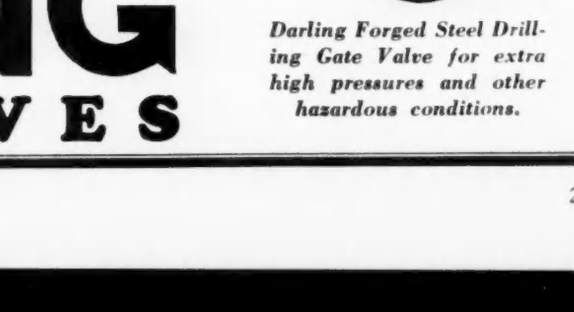


There are so many hostile elements conspiring to choke off production that it is well nigh impossible to guard against them all. However, there is little reason to put up with troublesome valves. This source of delay and expense is removed and forgotten when Darling Gate Valves are installed.

They have everything in their favor—strength, simplicity of construction, ease of operation and long-wearing parts. They have ample clearance through the seats against injury by tools, pipe, etc., passing through the valve.

Further details on request.

Darling Semi-Steel Gate Valve made in all sizes for General Field Use, Pipe Lines, Drilling Through, Well Control and Well Flow Lines.



Darling Forged Steel Drilling Gate Valve for extra high pressures and other hazardous conditions.

Darling Valve & Mfg. Co.

WILLIAMSPORT, PA.

New York **Oklahoma City** **Houston**

Mid-Continent Distributors
INTERNATIONAL SUPPLY CO.

California Distributors
HICKEY PIPE & SUPPLY COMPANY
3375 East Slauson Ave., Los Angeles, Calif.

DARLING
GATE VALVES

SUPREMACY

built by better performance

Nine sizes with either Flat Link or Cable Chain for Pipe 1/8" to 18"

For thirty-six years "Vulcans" have been the leading tongs of the Oil Fields. Consistent superiority; ability to take continued punishment year after year, and thrive on it — that's the answer!

Every Williams' "Vulcan" Chain is proof-tested and *certified*. Jaws and Handle are tough drop-forgings. Through-bolt is *extra heavy*, and its U. S. Standard Nut simplifies replacement.

Buy from your distributor.

J. H. WILLIAMS & CO.
"The Wrench People"
75 Spring St., New York, N. Y.

Western Warehouse and Sales Office **— Chicago**
Works **— Buffalo, N. Y.**

GENUINE WILLIAMS
SUPERIOR DROP-FORGED TOOLS
"VULCAN"
DROP-FORGED
CHAIN PIPE TONGS

puted curve. From Figure 2 the pressure decline over a long period may be estimated in order to obtain some idea of the rate at which the pressure may be expected to fall as the production of the well is continued. However, the limitations of the assumptions must be remembered, and the pressure decline estimated in this manner can be regarded only as an approximation.

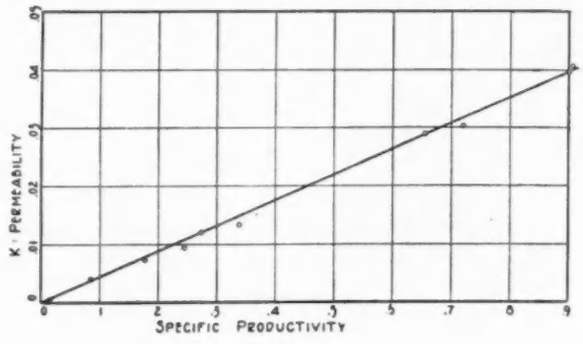


FIGURE 9
Permeability vs. Specific Productivity

It is interesting to note how the calculated permeability varies with the specific productivity. Figure 9 presents data showing the relation between these quantities from actual tests on a number of wells completed with five-inch holes.

Pressure-Gradient Curves and Radius of Influence

One interesting application of this mathematical analysis is the calculation of the pressure-gradient curve around a well. In Figure 10 the pressure-gradient curve for a well operated at constant pressure in an indefinitely large reser-

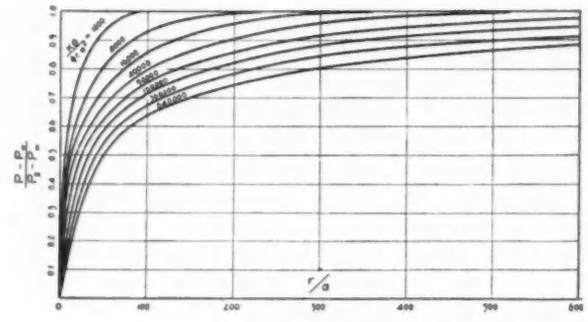


FIGURE 10
Pressure-Gradient Curves.

voir are shown. A curve is given for each value of the relative time:

$$\frac{K\theta}{c\phi a^2}$$

These curves follow quite closely the curves derived for steady flow, the equation for which has been presented in a number of previous articles.[6,7] This steady flow equation is:

$$2.3 \log_{10} \frac{b'}{a} = \frac{2\pi KH(P_R - P_w)}{q_R}$$

The term **b'** is defined as that value of the radius which, when substituted in this equation, gives the same production rate and approximately the same pressure gradient as exist under the actual conditions of unsteady flow. This term is referred to as the drainage radius; but should not be considered to mean the distance to which the well has completely drained the reservoir, but rather the distance

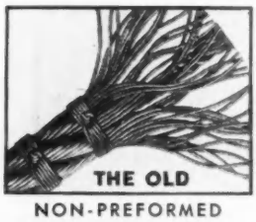
We like 'em "HARD BOILED"

. . . if they ask us to *prove* that TRU-LAY Preformed Wire Rope will save them money. We welcome such an inquiry from a man who knows what he wants . . . and wants to be shown. That's the way our best customers have been hatched, because shrewd and careful buyers are alive to possible savings in wire rope.

We expect you to be "hard-boiled" in the matter. Because we know if you convince yourself that TRU-LAY gives much better and longer service, we will add another customer to our long list of TRU-LAY users.

Tell us your wire rope usage and service. Our experience over a long period of years, in hundreds of instances and applications will prove in good stead . . . to lower *your* wire rope costs, just as we have lowered wire rope costs for others.

Try TRU-LAY Preformed Wire Rope. An ounce of experience is worth a ton of advice.



NON-PREFORMED

PREFORMED

"I-T" (internal tension) in wire rope is eliminated by preforming strands and wires to their exact helical shapes . . . so they lie in place *relaxed*. As a result, TRU-LAY Preformed Wire Rope gives much longer service and greater efficiency.

TRU-LAY combats fatigue, is easier and safer to handle, resists kinking and high-stranding. Each strand carries an equal load.

The sum of these and other advantages results in worth while wire rope savings.

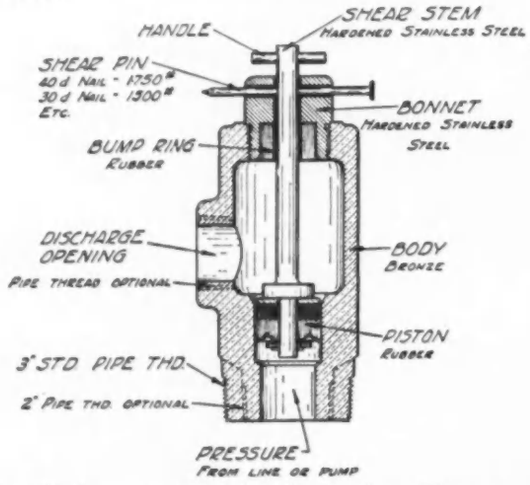
Address the AMERICAN CABLE COMPANY, *Inc.*
WILKES-BARRE, PENNSYLVANIA

An Associate Company of the American Chain Company, *Inc.*
District Offices: Atlanta, Chicago, Detroit, Denver, Houston, New York, Philadelphia, Pittsburgh, San Francisco

PROTECT Mud Pump, Rotary Hose and Mud Lines with

The SHEAR-RELIEF Valve

Positive, instantaneous, accurate, economical. A new valve, thoroughly tested in shop and field. Made for use wherever pressure fluid is abrasive or corrosive or where operating pressures are high with any fluid. Special synthetic rubber piston impervious to oil furnished for use on pipe line installations. No valve seat to wear out; no springs. Leakage eliminated.



The shear pin (a common wire nail) is in pure shear. When the pressure against the piston exceeds the shear stress of the pin, the valve opens. The "give" of the rubber in the piston starts the shear. The size of the nail used determines the setting of the valve. A table of nail sizes for different pressure settings is on a brass plate fixed to each valve. Send for descriptive folder.

FLUID-PISTON SLUSH PUMPS

ABERCROMBIE PUMP CO.

GULF BLDG. HOUSTON TEX.

CONSTANT research in field and laboratory, the use of superior crude oils, and the most modern refinery equipment are the three stones in the foundation upon which Humble quality has been built.

HUMBLE

OIL AND REFINING

COMPANY

Producers, Transporters, Refiners and Marketers of Petroleum and Its Products

from which oil is flowing to the well in appreciable quantities. The term b' varies with the relative time:

$$\frac{K\theta}{c\phi a^2}$$

and a curve showing this relationship is given in Figure 11.

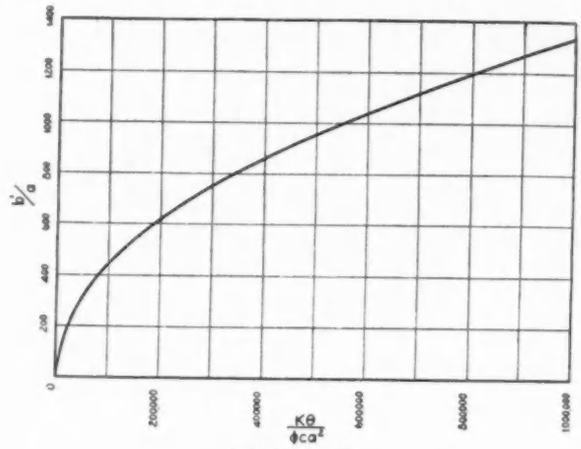


FIGURE 11
Relation of Time to Drainage Radius

This relationship is purely empirical, but may be used in calculating the pressure-gradient curve. The apparent drainage radius, b', is about 60 per cent as great as the distance from which the well drains oil, as indicated by the equations for unsteady flow.

The drainage radius calculated by this method varies nearly as the square root of the ratio:

$$\frac{K\theta}{\phi ca^2}$$

Because of the probable error in the estimation of c, ϕ, and

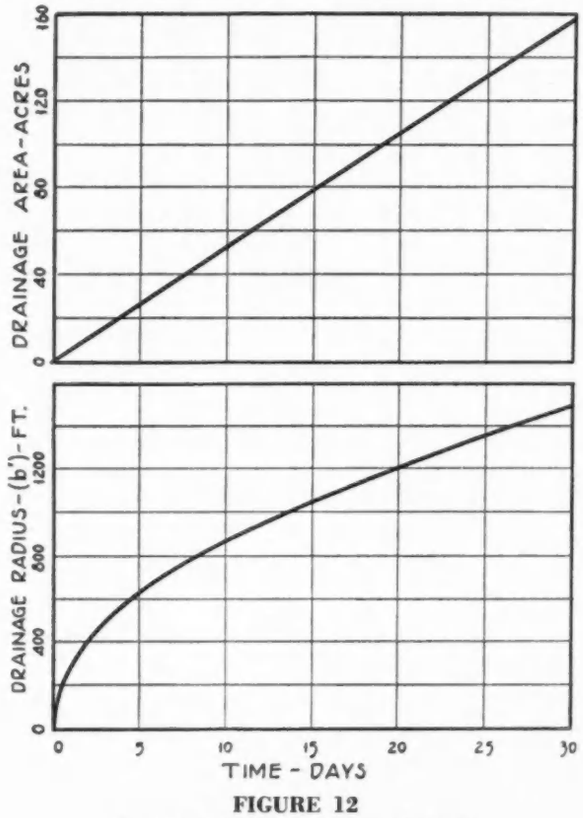


FIGURE 12
Drainage Radius of Typical Well.

CHAMPION ROTARY HOSE

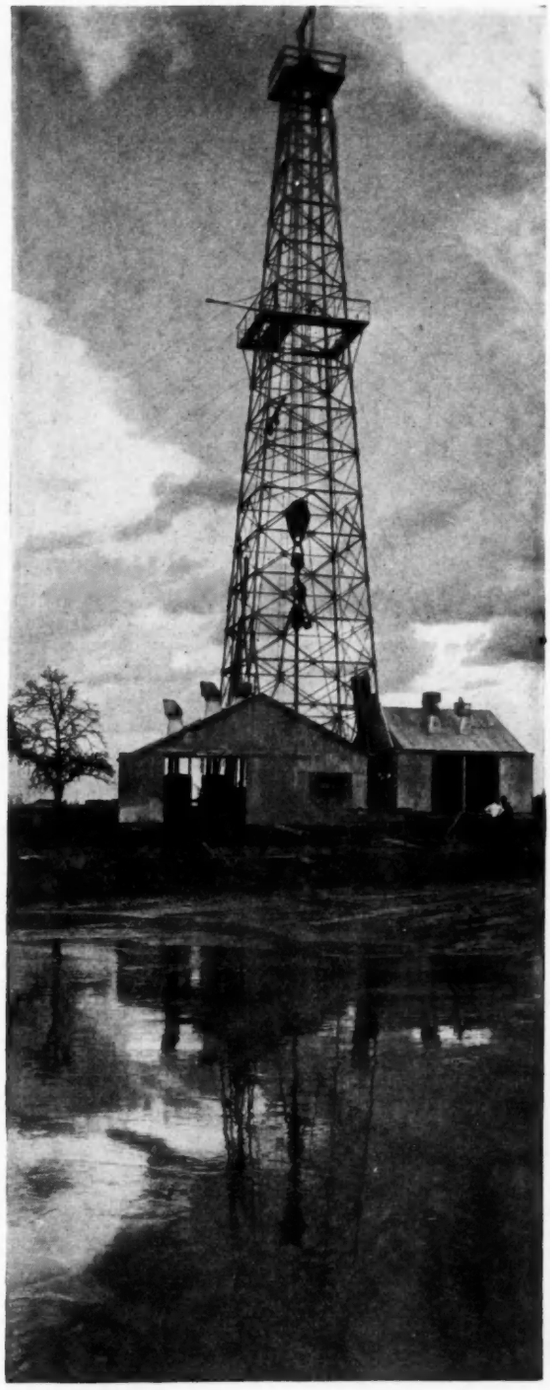
Stands Up Against 5,000 lb. Jolts

WITH brute strength built into every part of its construction, Champion Rotary Hose takes those mighty pressure surges which frequently occur in deep well drilling and stands up against 5,000 lb. jolts when they come.

This powerful hose is made of many plies of heavy fabric reinforced with layers of closely spaced high carbon steel wire. Its heavy tube resists the abrasion of sand and grit, and its wear-resisting cover endures the toughest abuse.

Republic engineers are backed by 25 years' experience with oil well products. They have complete facilities for making every hose test. They have established such rigid specifications for Champion Rotary Hose that you are assured of highest quality and longest service.

◆ ◆ ◆



Mid-Continent Distributors

FRICK-REID SUPPLY CORPORATION,
TULSA, OKLA.

THE BOVAIRD SUPPLY CO.,
TULSA, OKLA.

THE REPUBLIC RUBBER CO. YOUNGSTOWN, OHIO

Manufacturers of Transmission Belting, Hose of all types,
Packing, Gaskets, Rings, etc. for Oil Country Service

WHITNEY
ROLLER CHAIN
DRIVES
. . . . give dependable performance even under the most severe operating conditions. Their inbuilt quality is reflected in lasting and efficient service.
AT THE EXPOSITION
SPACE 416-418
Represented By
O. H. HOLMAN
1613 Bryan St.
DALLAS, TEXAS
THE WHITNEY MFG. CO.
HARTFORD, CONN. U.S.A.

a, and because of the lack of uniformity in actual producing sands, the actual drainage radius cannot be calculated with great accuracy; but it can be estimated roughly, and the relative size of the drainage radius of several wells can be determined. Figure 12 shows how the drainage radius and drainage area of the well used as an example in the foregoing discussion varies with time.

It is interesting to observe that the drainage radius depends on time, but not on the rate of production. Thus, it is evident that a well produced slowly will drain a much larger area than one produced rapidly. Although the influence of this condition cannot be evaluated quantitatively at the present time, it points to the conclusion that the recoverable oil can be obtained with wide well spacing in a field whose rate of withdrawal is restricted.

Conclusions

In order to understand properly the conditions in oil-producing reservoirs, a knowledge of the physical properties of the fluids and the reservoir rock is essential. The most important of these properties is the average permeability which can be determined from field tests.

Permeability greatly influences the ultimate recovery in oil reservoirs, and is of primary importance in the selection of a proper well-spacing program. With adequate knowledge of the effect of such important factors as this, and with reliable means for determining these quantities, the problems of evaluation, economical development, and proper control of oil-producing properties can be solved with greater precision. It seems that the elimination of guess work in such problems would be of utmost value to the producer whose economic survival depends upon obtaining oil as cheaply as possible.

One of the most interesting conclusions to be reached from this work is that well spacing much wider than that used in the past can be used, and that the number of wells required to drain a field adequately can be reduced if the rate of production from the field is kept at a low figure. However, it is unfortunate that in most fields, at present, factors other than proper engineering considerations govern the well spacing; and, as long as this condition prevails, the industry must continue to spend money in unnecessary development.

Acknowledgment

The authors are indebted to W. K. Lewis, of the Department of Chemical Engineering, Massachusetts Institute of Technology, for the valuable suggestions which he has contributed during the course of this work. H. D. Wilde, Jr., in charge of production research, Humble Oil & Refining Company, has directed the work, and has assisted materially in the preparation of this paper. F. M. Black and W. R. Veale, II, Humble Oil & Refining Company, have secured the field data presented herein.

Appendix

The mathematical analysis of the drainage of the uniform reservoir will be published elsewhere by William Hurst. It is based upon the following differential equation[8 9]:

$$\frac{\partial^2 \rho}{\partial r^2} + \frac{1}{r}\frac{\partial \rho}{\partial r} = \frac{c\phi}{K}\frac{\partial \rho}{\partial \theta}$$

The general solution of this equation is:

$$\rho = \sum_{n=1}^{n=\infty} [A_n J_0(\beta_n r) + B_n Y_0(\beta_n r)]e^{\frac{\beta_n^2 K \theta}{\phi C}}$$

The terms A_n, B_n, and β_n are arbitrary constants to be

• *Interior View of 80,000-Barrel Tank under construction (117' 6" diameter x 41' 5" high)*

WYATT Welded Tanks are in service in refineries, bulk storage and field storage in more than fifty locations in Texas and Oklahoma. More than 200 units are in service and 2,500,000 barrels are in use in sizes from 500 to 80,000-barrel capacity. Immediate Shipment . . Rapid Erection . . Liquid and Gas-Tight . . Efficient Storage . . Lowest Costs.

WYATT METAL & BOILER WORKS

Dallas ***Capital $1,000,000*** **Houston**

WYATT METAL & BOILER WORKS

PLANTS AT DALLAS AND HOUSTON

Minimizing the Gamble in Wildcatting

Straight hole drilling has greatly helped to cut down the percentage of dry holes. In proven territory, dry holes have been almost eliminated — due to straighter holes and directional surveys.

Surwel Surveys secure accurate data on formation depths and prevent any condemnation of producing reservoirs because of faults, shape or apparent structures low of the horizon.

Directional Underground Surwel Surveys are also being used by many companies to secure proper well spacing.

Price List No. 2 gives information and costs on Surwel Surveys. Write for your copy.

SURWEL Clinograph

SPERRY-SUN WELL SURVEYING COMPANY

1608 Walnut Street — Philadelphia, Pa.

Dallas, Texas
1501 Munger Ave.

Tulsa, Oklahoma
402 Petroleum Building.

Tyler, Texas
Peoples Natl. Bank Bldg.

Wichita Falls, Texas
339 Harvey Snider Bldg.

Denver, Colo.
614 C. A. Johnson Bldg.

Bradford, Pa.
Hooker Fulton Bldg.

Houston, Texas
820 Esperson Building.

Los Angeles, Calif.
415 Petroleum Securities Building.

determined from the conditions imposed on the problem, and $J_0(\beta_n r)$ and $Y_0(\beta_n r)$ are Bessels functions.[10]

For the case in which the pressure at the well is constant, the solution is:

$$\frac{HK\,[1-e^{-144C(P_R-P_W)}]}{q_R C} = \frac{5.63}{16\pi \sum_{n=1}^{n=\infty} \frac{e^{-\frac{\beta_n^2 K\theta}{\phi c a^2}}}{[\beta_n b \pi V_0(\beta_n b)^2 - 4]}}$$

wherein:

$$V_0(\beta_n b) = Y_0(\beta_n a)J_0(\beta_n b) - J_0(\beta_n a)Y_0(\beta_n b)$$

and β_n is a root defined by the equation:

$$\frac{J_0(\beta_n a)}{Y_0(\beta_n a)} = \frac{J_1(\beta_n b)}{Y_1(\beta_n b)}$$

For the case in which the rate of production is constant, the solution is:

$$\frac{HK\,[1-e^{-144C(P_R-P_W)}]}{q_R C} = 5.63\pi \sum_{n=1}^{n=\infty} \frac{U_0^2(\beta_n a)\left[1-e^{-\frac{\beta_n^2 K\theta}{c\phi a^2}}\right]}{[4-\beta'^2_n a^2 \pi U_0(\beta'_n a)^2]}$$

wherein:

$$U_0(\beta'_n a) = Y_0(\beta'_n b)J_0(\beta'_n a) - J_0(\beta'_n b)Y_0(\beta'_n a)$$

and β'_n is a root defined by the equation:

$$\frac{J_0(\beta'_n b)}{Y_0(\beta'_n b)} = \frac{J_1(\beta'_n a)}{Y_1(\beta'_n a)}$$

Exhibit "A"
Nomenclature

P_R	Shut-in reservoir pressure, lb. per sq. in.
P_W	Pressure at face of producing sand, lb. per sq. in.
q_R	Production rate, bbl. per day (oil and gas mixture, corrected to volume at P_R).
Q_R	Cumulative production, bbl. (oil and gas mixture, corrected to volume at P_R).
ρ_R	Density of oil and gas mixture at P_R, lb. per cu. ft.
ρ_W	Density of oil and gas mixture at P_W, lb. per cu. ft.
K	Permeability, cu. ft. per day per sq. ft. per lb. per sq. ft. per ft.
C	Compressibility of oil and gas mixture, cu. ft. per cu. ft. per lb. per sq. ft.
ϕ	Porosity, fraction.
θ	Time, days.
a	Radius of well bore, ft.
b	Radius of outer limit of a finite cylindrical reservoir, ft.
b′	Apparent drainage radius of well, as defined in text, ft.

Bibliography

[1] Wilde and Moore, "Hydrodynamics of Reservoir Drainage and Its Relation to Well Spacing," *Proc. Thirteenth Annual Meeting, Amer. Pet. Inst.*, Sect. IV, p. 83-90.

[2] Wilde and Moore, "A Method for Determining Production Allowances in Prorated Fields," *Oil Weekly*, **61, no. 12,** 26 (1931).

[3] Fettke and Copeland, "Permeability Studies of Pennsylvania Oil Sands," *Trans. Am. Inst. Mining Met. Eng.* (Pet. Div.) p. 438 (1932).

[4] C. V. Millikan, "Geological Application of Bottom-Hole Pressures," *Bull. Am. Assoc. Petroleum Geol.*, **16, no. 9,** 891-906 (1932).

[5] D. G. Hawthorn, "Applying Sub-surface Pressure Determinations to the Problems of Oil Well Production," *Oil Gas J.*, **31, no. 20,** 36-44 (1932).

[6] Schlichter, "Theoretical Investigation of the Motion of Ground Water," *U. S. Geol. Survey, Nineteenth Annual Report*, 1897-8.

[7] Muskat and Botset, "Flow of Gas Through Porous Material," *Physics*, **1, no.1,** 27 (1931).

[8] Carslaw, *The Conduction of Heat*, the Macmillan Co., New York, Chap. VII, p. 113 (1921).

[9] Lamb, *Hydrodynamics*, Cambridge Univ. Press, Boston, Chap. 1, p. 6 (1916).

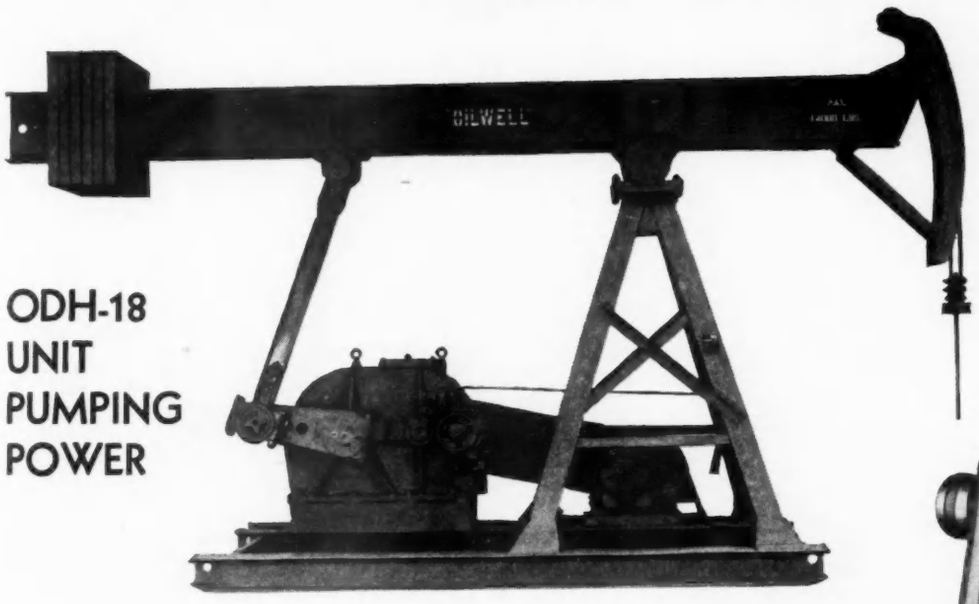
[10] Watson, *Theory of Bessel Functions*, Cambridge Univ. Press, Boston (1922).

"OILWELL'S" NEW

GEARED PUMPING UNITS

SET HIGHER STANDARDS FOR••

SMOOTH, SILENT PERFORMANCE



ODH-18
UNIT
PUMPING
POWER

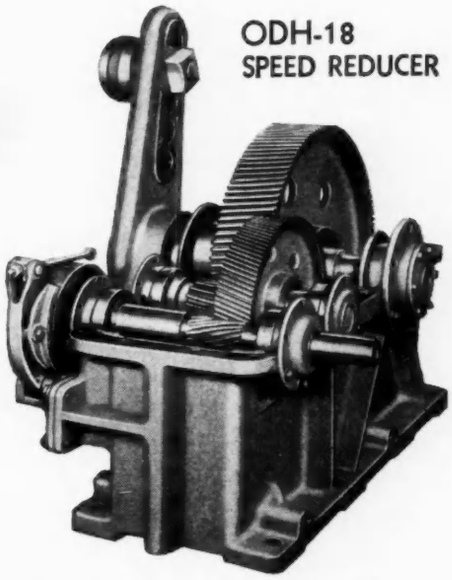
The ODH-18 Production Unit illustrates the advanced design and rugged construction of "Oilwell's" new single crank line of Pumping Powers.

Capacity: **14,000-lbs. dead weight polished rod load; Input capacity—20 H. P. electric motor, or 35 H. P. gas or oil engine.**

Flexibility: **up to 22 strokes per minute; stroke lengths 22½", 30", 37½", 45", 52½".**

Convenience: **Walking Beam design permits ample clearance for servicing well. Many other convenience features provided.**

ODH-18
SPEED REDUCER



ODH-18 Oil Bath Double Reduction Gear design is the result of extensive research by experienced Gear engineers. This Reduction Gear is the most efficient and dependable unit available for this service. The Gear Case is of heavy ribbed construction as illustrated. The Gear Reducer, with roller-bearing mountings for all shafts and with heat-treated helical gears, assures *smooth, silent performance*.

Low Speed Shaft Extension is provided with three Keyways to permit change of crank position to equalize wear on the gears.

Inquire at Nearest Store or Office for Information on "Oilwell's" New Line of Single Crank and Twin Crank Units.

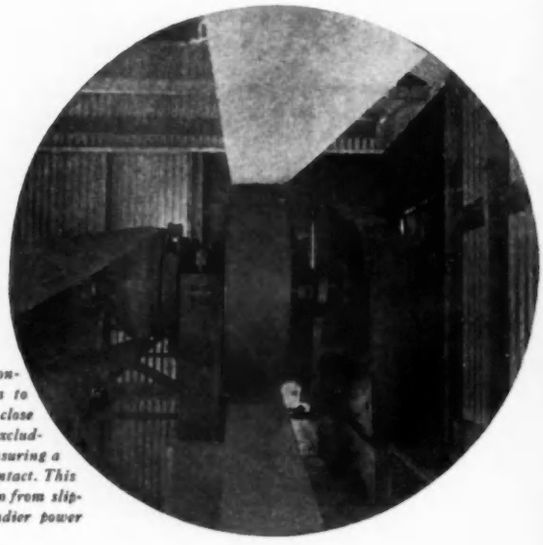
OIL WELL SUPPLY CO. - BRANCH STORES IN ALL OIL FIELDS

SUBSIDIARY OF UNITED STATES STEEL CORPORATION

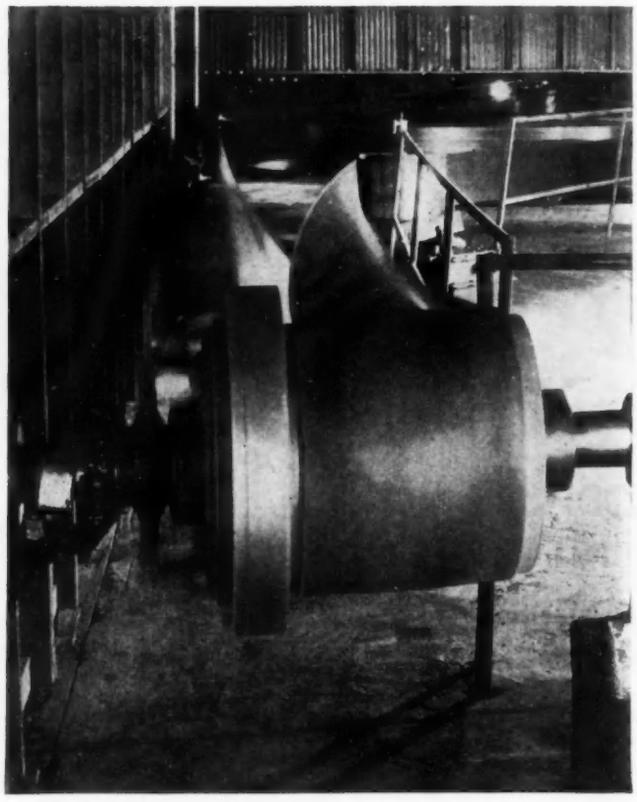
2211

"OILWELL"

Average belt cost was



"Highflex" construction gives to this belt its close pulley grip, excluding air and insuring a full arc of contact. This means freedom from slippage and steadier power transmission.



Typical installation of Goodrich "Highflex" Transmission Belting on a Band Power Drive in Oklahoma. It is for jobs like this that Goodrich "Highflex" has been placed at the head of the list of "approved belts."

"AN EXCEPTIONAL SAVING was effected by this belt," says an oil well operator who is a satisfied user of 'Highflex' transmission belting . . . "After four years of hard service, it established a record for *average belt-cost* of *only 11c per day* as compared with an average daily belt-cost of 22c on all previous belts. Since the original installation, thirteen additional 'Highflex' belts have been installed." (Goodrich performance report No. 2105-161).

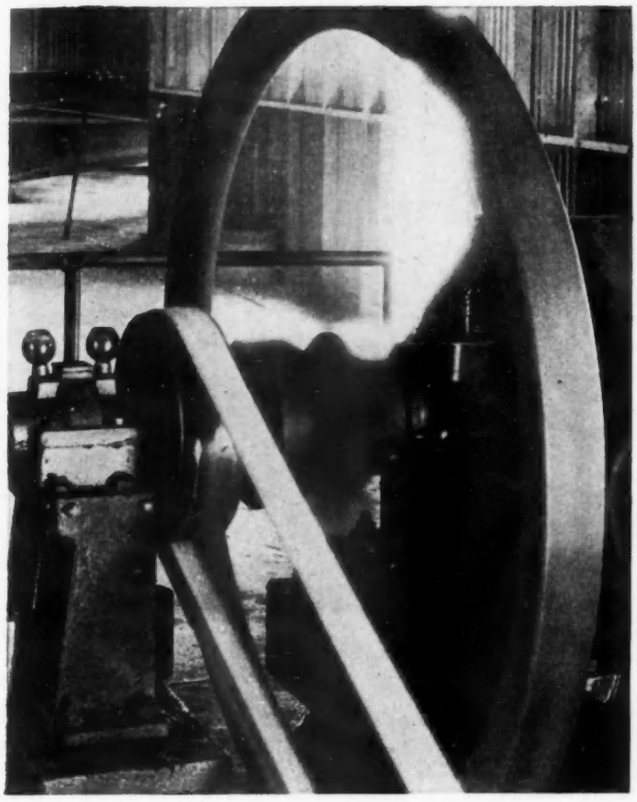
In line with efficiency methods adopted by progressive engineers to reduce wasteful consumption of supplies, maintenance equipment, and operating time, "Highflex" Transmission Belting outwears other types and cuts down costs for its users—sometimes up to 50% as compared with all previous belts.

Here is belting especially designed to withstand, over long periods, the terrific intermittent strains put upon it in the ceaseless grind of oil well operation. Belting that insures you freedom from excessive slippage, abnormal stretching, open seams, ply separation; that offers the greatest possible resistance to the cutting and wearing action of metal fasteners. No matter how brutal the load, no matter how gruelling the pull!

We build it endless—"Highflex" Transmission Belting, built endless at the factory, more than justifies the expense and inconvenience of installation. It

Goodrich

ONLY 11¢ PER DAY



GOODRICH PRODUCTS FOR THE OIL INDUSTRY INCLUDE:

- *Belting*
- *High-Pressure Rotary Drilling Hose*
- *Stuffing Box Rings*
- *Casing Guards*
- *Air, Water, Fire and Suction Hose*
- *Sheet Packing*

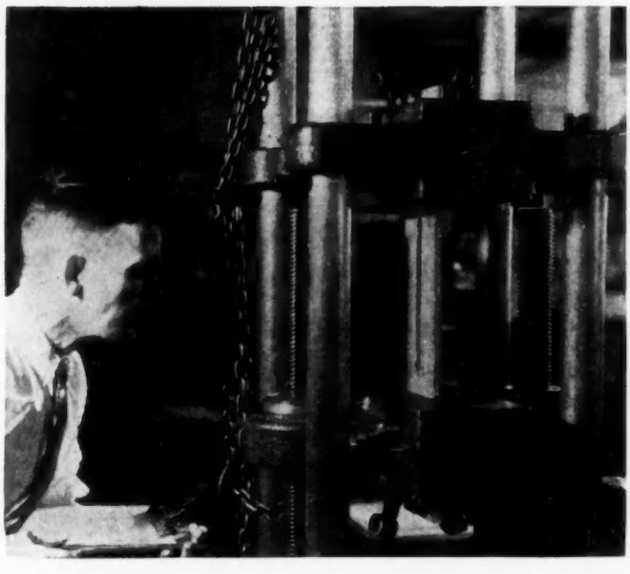
•

ALL *products problems* IN RUBBER

•••

effectively solves all fastener problems, insures smoother operation, transmits more power and increases the life of the belt. *Or make it endless on the job*—Whenever it is impracticable to order factory-built endless belts, "Highflex" can be made endless on the job by means of portable vulcanizers.

If you don't happen to be familiar with "Highflex" Transmission Belting—have not seen it perform—write for the book, "A New Rubber that Turns the Wheels of Industry." . . . The B. F. Goodrich Rubber Company, Mechanical Rubber Goods Division, Akron, Ohio.



"Highflex" possesses superior strength, flexibility and endurance. Every slab is subjected to this severe stress-strain test before it leaves the Goodrich factory.

Highflex Belting

RIGHT ON THE DESK . . .

"Your Composite Catalog stands in a conspicuous place on our desk and has proven very helpful."

LINDERMAN BROTHERS,
Producers,
Beverly Hills, Calif.

While the General Catalog File Room has many Bulletins, Catalogs, etc., these operators get quicker action from The COMPOSITE CATALOG . . . hence they keep it on the desk at all times.

"Individual sales bulletins, etc. find their way to the waste basket promptly, but your Composite Catalog maintains its place on our desk at all times."

E. G. KENDALL, *Supt.*,
Benedum Trees Oil Co.,
Ada, Oklahoma.

The Busy Man saves much time by using The Composite Catalog — FIRST.

COMPOSITE CATALOG DIVISION

The Gulf Publishing Company, P. O. Box 2811, Houston, Texas

Oil Equipment & Engineering Exposition Epuipment Directory

Below is a late list of exhibitors and items exhibited, together with names of representatives of exhibitors who will be in attendance at the booths. Late arrangements for space in some instances is responsible for complete data not being available on all exhibitors included in the list.

J. S. ABERCROMBIE COMPANY
Houston, Texas

Booth No. 301

ADAMS MANUFACTURING & ENGINEERING CO.
Los Angeles, California

Booth No. 620

AIR MAZE CORPORATION
Cleveland, Ohio

Booths Nos. 18-20

GEO. B. ALLAN & COMPANY
Dallas, Texas

Booth No. 212

Exhibit: Armstrong Steam Traps, both for standard pressures and forged steel. Also a glass model of new trap in operation.

Representatives: George B. Allan, Otto Ulrich and F. C. Futral.

AMERICAN ASKANIA CORPORATION
Houston, Texas

Booths Nos. 321-323

AMERICAN FOREST PRODUCTS INDUSTRIES
Houston, Texas

Booths Nos. 4-6

THE AMERICAN HAMMERED PISTON RING CO.
Baltimore, Maryland

Booths Nos. 444-445

Exhibit: Complete line of Piston Rings. Hammering machine showing how to hammer piston rings and Movietone picture showing feats using American Hammered Piston Rings, such as Byrd flying over the North Pole, the airship Los Angeles, the Capital Limited Railroad Train, etc. Various metals used in the manufacture of piston rings.

AMERICAN IRON & MACHINE WORKS COMPANY
Oklahoma City, Oklahoma

Booths Nos. 420-421-422

Exhibit: American releasing and circulating overshot; wall hook; type E milling shoe; type F milling shoe; flexible coupling; paraffin bit; female die nipple; taper tap; forged steel type H sub; forged steel type G sub; rotary shoe; Myracle sucker rod socket; break-out block; cone fishing socket; inside pipe cutter; drill pipe float joint; combination throttle and reverse lever; shot packed working barrel; steel rib braces; automatic cathead; type K flat bottom mills; type L round nose mills; Reaney pattern mills; flow and pumping packer; boltless hose couplings; releasing and circulating spear; casing suspender and blow out preventer; Hewgley tie down flange; safety packing flange; wild well capping device; high pressure well hook up.

Representatives: Earl W. Miller, John F. Cailloux, John R. Riley, P. K. Ridge, C. O. Jensen and George S. Hinkle.

AMERICAN SAND-BANUM COMPANY, INC.
New York, N. Y.; Houston, Texas

Booth No. 305

AMERICAN WELL & PROSPECTING CO.
Corsicana, Texas

Booth No. 110

Exhibit: "Gumbo Buster" Type "G" Pump, Model "C". Size 14½" x 7¼" x 18".

Representative: Oscar C. Hohl.

ANGELINA COUNTY LUMBER COMPANY
Keltys, Angelina County, Texas

Booth No. 230

Exhibit: Patented Pumping Derrick and specialties.

Representatives: D. W. Thompson and H. A. Maas.

ARMSTRONG MACHINE WORKS
Three Rivers, Michigan

Booth No. 212

BAASH-ROSS TOOL COMPANY
Los Angeles, California

Booth No. 316

Exhibit: Blowout preventers; casing heads; casing cutters; casing perforators; casing shoe with marble guide; fishing taps; liner hangers; liner setters; packing casing bowls; packing overshots; pipe slotting machines; roller bearing kelly bushings; rotary jars; rotary releasing sockets; rotary releasing spears; safety joints, slotted pipe; traveling blocks and upset kelleys.

Representatives: George E. Dewdney and A. F. Brown.

BAKER OIL TOOLS, INC.
Huntington Park, California

Booths Nos. 221-223-320-322

Exhibit: Casing shoes; cement dump bailers; cement plugs; cement retainers; circulation jars for cement retainers; cement baffle collars; cement bull plug casing shoe; cement float collar; cement float shoe; cement guide casing shoe; cement whirler shoes; whirler cementing collar; cable tool core barrel; drill pipe float; rotary hydraulic expansion wall hook; Baker rotary hydraulic expansion wall scraper.

Representatives: W. A. Davis, C. E. Burt, Charles Thornhill, Walter Routt and Walter Cooney.

BANNON SALES COMPANY
Houston, Texas

Booth No. 225

BAROID SALES COMPANY
Los Angeles, California

Booths Nos. 324, 326, 328

Exhibit: Baroid—Extra-heavy colloidal drilling mud; Aquagel—"Trouble-proof" colloidal drilling mud; Lemco Mud Screen—For removing cuttings and abrasive material from drilling mud; Stabilite—A chemical mud thinner; Visco—Petroleum emulsion breaker.

Representatives: H. H. Farnham, J. W. O'Brien, Geo. H. Parsons, D. A. Sikes, F. E. Palmer and Ed. Taulbee. X. R. Randall and Max Welch of Beaumont Cement Sales Co.; Ray Levering, Lucey Products Corporation; F. H. Thorne and T. B. Wayne of the Visco Products Company will also be in attendance.

BEARD & STONE ELECTRIC COMPANY
Houston, Texas

Booths Nos. 325-327

BETTIS SALES COMPANY
Houston, Texas

Booths Nos. 426-428-430.

BOSCH MAGNETO CORPORATION
Springfield Massachusetts

Booths 325-327

THE BREWSTER COMPANY, INC.
Shreveport, Louisiana

Booth No. 340

Exhibit: Brewster wire line coring equipment; Brewster perfection core barrel and Brewster drag bits.

Representative: J. H. Schuler.

BUDA ENGINE COMPANY
Harvey, Illinois

Booths Nos. 18-20

E. D. BULLARD COMPANY
Houston, Texas

Booths Nos. 42-44

BULLUM SPECIALTY COMPANY
Overton, Texas

Booth No. 230

THE BURT CORPORATION
Tulsa, Oklahoma

Booths Nos. 329-331

Exhibit: Burt swabs.

Representative: L. G. Burt.

CALIFORNIA OIL WORLD
Los Angeles, California

Booths Nos. 616-618

CAMERON IRON WORKS
Houston, Texas

Booths Nos. 303-402

Exhibit: Abercrombie-Shimek weight recorder; C. I. W. fluid operated blowout preventer; C. I. W. combination tubing suspension head and blowout preventer; C. I. W. re-setting type tubing plug; C. I. W. automatic centering type rams for blowout preventers.

Representatives: Ace Bland, E. L. Lorehn and W. E. King.

THE CAVINS COMPANY
Long Beach, California

Booths Nos. 504-506

Exhibit: The "Cavins."

Representative: Tom Sharp.

CAVINS CLEAN-OUT SERVICE
Oklahoma City, Oklahoma

Booths Nos. 504-506

CHAIN BELT COMPANY
Milwaukee, Wisconsin

Booth No. 217

Exhibit: New Rex Chabelco DW4 and DW3 chains. Moving exhibit of the new chain has been prepared for the show. A strand of the new Rex Chabelco DW4 chain will be mounted on two large chromium plated sprockets, to show the chain in operation. Samples of various Rex chains that have definite applications in the oil fields along with Rex roller chains for high speed drives. Also samples of Rex Z-Metal showing corrosion tests, hardness tests, polish, etc.

Representatives: Brinton Welser, Russell G. Davis and Al Abelt.

W. H. CURTIN & COMPANY, INC.
Houston, Texas

Booth No. 409

Exhibit: Laboratory apparatus; control instruments.

Representative: K. H. Clough.

D. & M. MACHINE WORKS
Torrance, California

Booths Nos. 307-309

DARCOID COMPANY, INC.
New York, N. Y.

Booth No. 103

DEAN BROTHERS COMPANY
Indianapolis, Indiana

Booth No. 205

Exhibit: Pumping Machinery.

Representative: H. R. Bourne.

DEMULSO CORPORATION
Dallas, Texas

Booth No. 107

DIAMOND CHAIN & MANUFACTURING COMPANY
Indianapolis, Indiana

Booth No. 227

DIAMOND METAL COMPANY
Houston, Texas

Booths Nos. 516-518

Exhibits: Diamond Tube Metal for hard facing bits. Diamond Metal Inserts for setting bit edges. Swedish high carbon welding rod.

Representatives: W. T. Touchton, Walter McCaine, B. J. Ross and O. H. Sims.

EMSCO SCREEN PIPE COMPANY
Houston, Texas

Booths Nos. 206-208-210

THE FOX RIG AND LUMBER COMPANY
Ardmore, Oklahoma

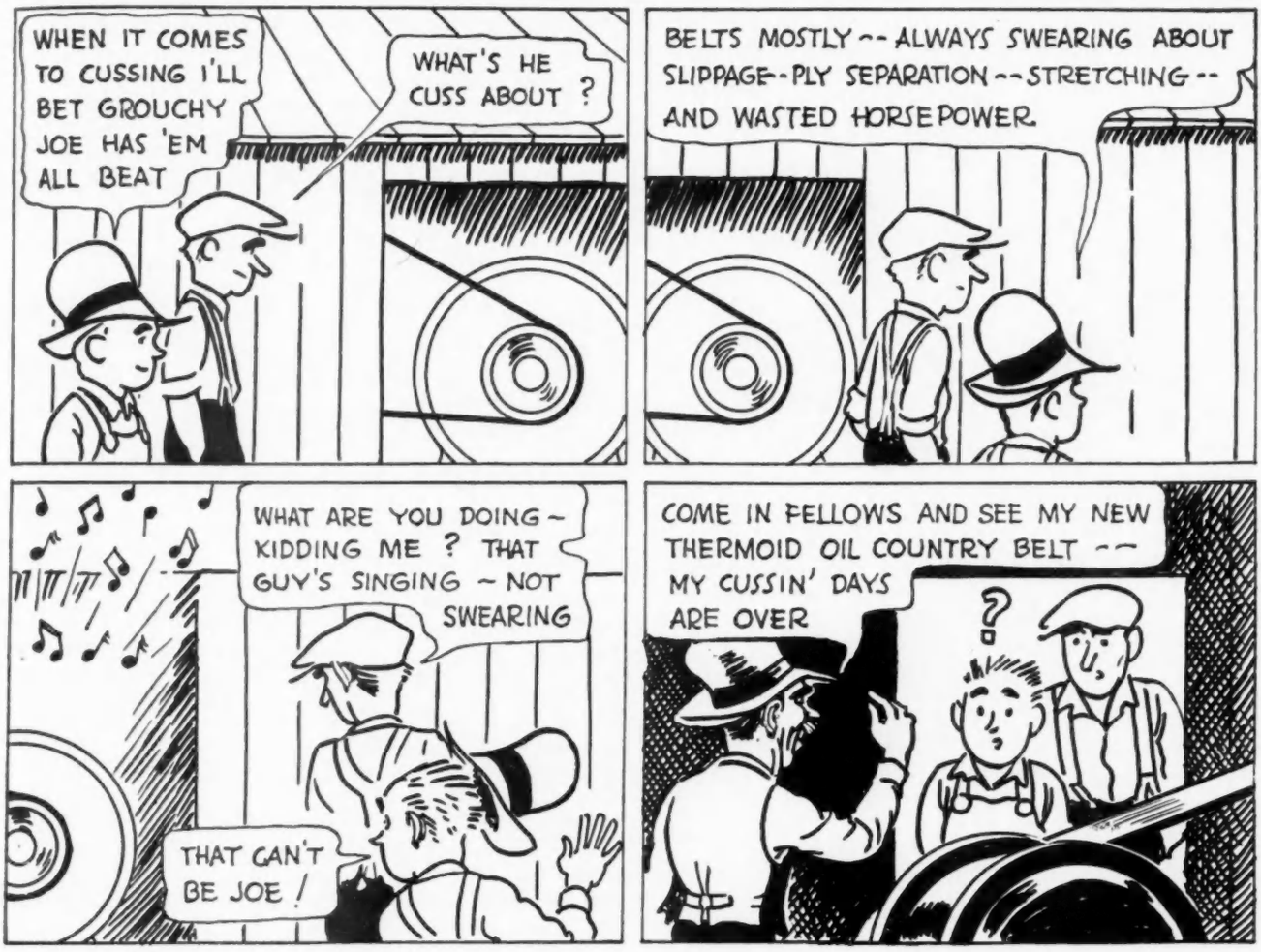
Outside Space.

Exhibit: Construction of the steel derrick which is being put on display by J. A. Werme of Oklahoma City.

FRANCE PACKING COMPANY
Philadelphia, Pennsylvania

Booth No. 225

JOE GOT A BELT TO SWEAR BY -- NOT AT !


WHEN IT COMES TO CUSSING I'LL BET GROUCHY JOE HAS 'EM ALL BEAT
WHAT'S HE CUSS ABOUT ?
BELTS MOSTLY -- ALWAYS SWEARING ABOUT SLIPPAGE - PLY SEPARATION -- STRETCHING -- AND WASTED HORSEPOWER.
WHAT ARE YOU DOING - KIDDING ME ? THAT GUY'S SINGING - NOT SWEARING
THAT CAN'T BE JOE !
COME IN FELLOWS AND SEE MY NEW THERMOID OIL COUNTRY BELT -- MY CUSSIN' DAYS ARE OVER
?

The Thermoid Oil Country Belt saves power . . . and dispositions, too! Greater flexibility! Long life! New freedom from slippage, stretching and ply-separation. Built for the job . . . like all Thermoid products . . . by a manufacturer with a thorough knowledge of the job's requirements. Let your next belt be this new Thermoid with the amber friction and the violet edge.

Get the full facts, too, about: Thermoid Oil Country Belting . . . Rotary Hose . . . Steam Hose . . . Water Hose . . . Fire Hose . . . Suction Hose . . . Air Hose . . . Brake Lining . . . Packings . . . Stuffing Box Rings.

OIL WELL SUPPLY CO.

Branch Stores in all Oil Fields

Oil Country Distributors of

Thermoid

BELTING · PACKINGS
BRAKE LINING · HOSE

FREMONT VALVE COMPANY
Oklahoma City, Oklahoma

Booths Nos. 426-428-430

GARLOCK PACKING COMPANY
Palmyra, New York

Booths Nos. 119-121

GATKE CORPORATION
Chicago, Illinois

Booth No. 106

GEARENCH MANUFACTURING COMPANY
Houston, Texas

Booths Nos. 218-220

Exhibit: Tubing tongs, pipe tongs, chain tongs, stabbing tongs, welding tongs, back-up tongs, go-round tongs, machine tongs, casing tongs, rotary tongs, derrick floor tongs, carrying tongs, carrying bars, Gearench, pipe wrench and sucker rod wrench.

GRAY TOOL COMPANY
Houston, Texas

Booths Nos. 313-315

Exhibit: Gray-Kerotest Christmas trees and accessories; Gray swivels; Gray release spear; Gray releasing overshot; Gray taper taps; Hooser wall hooks; Gray back-up tool; Gray float valves; Gray slush pump valves; Gray relief valve.

Representatives: R. A. Mueller, H. C. Potts, Roger Smith and C. E. Richards.

GULF COAST MACHINE & SUPPLY COMPANY
Beaumont, Texas

Booth No. 216

GULF ENGINEERING COMPANY
Houston, Texas

Booths Nos. 426-428-430

GULF PUBLISHING COMPANY
Houston, Texas

Booths Nos. 417-419

Exhibit: Data on oil publications, THE OIL WEEKLY, THE REFINER, PETROLEUM MARKETER, and Composite Catalogs; specimens of bulletin, book, and other printing.

Representative: J. D. Isaacks.

GULF REFINING COMPANY
Houston, Texas

Booths Nos. 341-343-440-442

GREAT SOUTHWEST MOTOR COMPANY
Houston, Texas

Booths Nos. 525-527-529-531.

HADEN LIME COMPANY
Houston, Texas

Booth No. 123

Exhibit: Pioneer continuous lime slacker for hydrating quick lime. Pioneer oyster shell lime.

Representative: Jack Trazevuk.

HALL & LOWREY IRON WORKS, INC.
Goose Creek, Texas

Booth No. 103

Exhibit: Hall & Lowrey inside casing cutters, automatic spears and Stafix pumps.

Representative: George Lowrey.

HALLIBURTON OIL WELL CEMENTING CO.
Duncan, Oklahoma

Booths Nos. 401-500

Exhibit: Latest type cementing equipment; HOWCO specialties, including the multiple stage cementer, full hole cementer, cement lining for screens or perforated liners, co-axial spiral, floating equipment, etc. HOWCO sand or formation tester and the HOWCO screen and perforation cleaner.

Representatives: W. S. Hovis, W. R. McClendon and other field men and engineers.

HAMER OIL TOOL COMPANY, LTD.
Long Beach, California

Booths Nos. 411-413-510-512

Exhibit: Hamer lubricated stop cocks; Hamer steel hose; Hamer E Z-Out liner sleeves; Hamer pistons; Hamer mud pump valves.

Representatives: C. K. Stillwagon.

HERCULES EQUIPMENT COMPANY
Galveston, Texas

Booth No. 108

Exhibit: Trailers.

HERCULES MOTORS CORPORATION
Canton, Ohio

Booth No. 207

Exhibit: Hercules oil field gas engines, including Model "RXB" engine.

Representatives: D. W. Latta, A. B. Wehling and R. J. Scott.

HEWITT-GUTTA PERCHA RUBBER CORPORATION
Buffalo, New York

Booth No. 302

Exhibit: Mechanical rubber goods, including oil field belting; rotary hose; gasoline tank truck hose; steam, water, air hose; tank car unloading hose; oil discharge hose; flue cleaning hose; stuffing box rings; fire hose; foamite hose; sand blast hose and packings.

Representatives: F. H. Dickinson and L. D. Bigelow.

O. H. HOLMAN COMPANY
Dallas, Texas

Booths Nos. 416-418

Exhibit: Roller and silent chains for transmission purposes. Also new anti-whip chain and flexible chain couplings.

Representative: O. H. Holman.

HOUSTON-MADE PRODUCTS
Houston, Texas

Booths Nos. 22-24-26-28

HOUSTON OIL FIELD MATERIAL COMPANY, INCORPORATED
Houston, Texas

Booths Nos. 206-208-210

HUMBLE OIL & REFINING COMPANY
Houston, Texas

Booths Nos. 45-144

Exhibits: Oils and greases.

INDEPENDENT PETROLEUM ASSOCIATION OF AMERICA
Tulsa, Oklahoma

Booths Nos. 617-619

BIG LAKE OIL COMPANY

Producers of

Reagan County High Grade

CRUDE OIL

and

NATURAL GASOLINE

Executive Offices
PITTSBURGH, PENNA.

Field Offices
TEXON, TEXAS

INFERNO COMPANY
Shreveport, Louisiana

Booth No. 515

JEFFERSON UNION COMPANY, INC.
Lexington, Mass.

Booth No. 215

Exhibit: Jefferson patented unions, flanges and pipe fitting specialties.

Representative: Donald Weir.

THE JEFFERY MANUFACTURING COMPANY
Columbus, Ohio

Booths Nos. 206-208-210

Exhibit: Jeffery oil well chains.

Representatives: T. P. Burke and M. Manning of Houston Oil Field Material Company.

JOHNS MANVILLE, INCORPORATED
New York, N. Y.

Booths 18-20.

JOHNSTON FORMATION TESTING CORPORATION
Longview, Texas

Booth No. 311

Exhibit: Johnston formation testing tool; Johnston Brother's trip valve, and J. L. Johnston's bottom hole by-pass.

Representative: J. L. Johnston.

JONES & LAUGHLIN SEEL CORPORATION
Pittsburgh, Pennsylvania

Booths Nos. 219-318

Exhibit: Oil country tubular products. Complete set of samples of new Jones & Laughlin line, J. & L. hot rolled seamless steel boiler tubes. In addition to samples of the material in different sizes and gauges, test specimens and sample installation emphasizing the superior workability of the new J. & L. hot rolled seamless boiler tubes. J. & L. seamless drill pipe, casing, tubing and line pipe. J. & L. steel piling samples.

Representatives: F. D. Grunder, H. L. Miller, A. E. Crockett, and A. P. Holloway.

KENNEDY VALVE MANUFACTURING COMPANY
Elmira, New York

Booth No. 203

Exhibit: Valves and fittings.

Representatives: C. H. Kennedy and D. F. Harrington.

KEROTEST MANUFACTURING COMPANY
Pittsburgh, Pennsylvania

Booths Nos. 313-314

Exhibit: Complete new series of high pressure oil field valves, comprising—Type "W" drilling valves; Type "WX" cross type drilling valves and Type "Z" flow line valves. A new cast steel balanced throttle valve for all temperature and pressure service; forged steel control chokes; forged steel fittings; drilling valves and flow line valves for every pressure. Various complete unit Christmas-trees. Hook-ups using auxiliary equipment of Gray Tool Works and Cameron Iron Works.

Representative: Harry Collins Potts.

KREITER GEAR & MACHINE COMPANY
Houston, Texas

Booth No. 227

A. LESCHEN & SONS ROPE COMPANY
St. Louis, Missouri

Booth No. 306

Exhibit: Complete lines of samples of the different kinds and types of wire ropes manufactured for the oil and gas industries.

Representatives: L. W. Weyler, L. H. Gault and E. E. Cole.

LIGON FISHING TOOL COMPANY
Houston, Texas

Booth No. 415

Exhibit: Ligon bit fishing tool; Sotco hydraulic knuckle joint; Sotco releasing packoff overshot; Sotco adjustable grab; Sotco plain wall hook and Brunt rotary underreamer.

Representative: J. Ligon.

LINK BELT COMPANY
Indianapolis, Indiana

Booths Nos. 426-428-430

MAGNOLIA PETROLEUM COMPANY
Houston, Texas

Booths Nos. 443-542

MAXWELL-BUTLER COMPANY
Houston, Texas

Booth No. 103

Exhibit: Stafix pumps and Hall & Lowery cutting tools, manufactured by Hall & Lowery Iron Works, Goose Creek, Texas; Darcoid packings, manufactured by the Darcoid Company, New York; Waterlox, a waterproofing compound and paint vehicle, manufactured by Waterlox, Inc., Detroit, Michigan. Photographs will also be shown covering Standard sectional steel buildings as manufactured by Geo. L. Mesker & Company, Evansville, Indiana.

Representatives: Earl H. Butler, L. J. Maxwell, S. W. Woolsey, M. J. Radinsky and Fletcher Tinsley.

MECHANICAL EQUIPMENT COMPANY
Houston, Texas

Booths Nos. 603-605-607-609.

Exhibit: Equipment of Double Seal Ring Company, Fort Worth, Texas; Surface Combustion Corporation, Toledo, Ohio; Webster Engineering Company, Tulsa, Oklahoma; and Wilgus Regulator Company, Los Angeles.

MERCHANT'S PHOTO SERVICE
Houston, Texas

Booth No. 615

Exhibit: Photographs of the oil industry made in the shops, field and general views around wells. One picture of the burning well at Conroe, Texas, colored and enlarged to 30x40.

Representatives: Quinton Williams and Wayne Rives.

MERCO NORDSTROM VALVE COMPANY
Pittsburgh, Pennsylvania, and Houston, Texas

Booths Nos. 600-601

MID-CONTINENT MUD COMPANY
Houston, Texas

Booths Nos. 206-208-210

MID-CONTINENT PUMP SUPPLY COMPANY
Tulsa, Oklahoma

Booths Nos. 426-428-430

Multiple STAGE CEMENTING

- reduces by more than 50% the pressure usually required
- provides a measure of safety against dangerous blowouts
- protects . . . . and conserves shallow productive formations for later development
- has effected direct savings of $1000 to $2000 per well
- HALLIBURTON
  OIL WELL CEMENTING COMPANY
  DUNCAN, OKLA.

- This folder tells the complete story . . . Write for your copy

HOWCO

MULTIPLE STAGE CEMENTING

MISSION MANUFACTURING COMPANY
Houston, Texas

Booth No. 104

JOHN MULLER COMPANY
Houston, Texas

Booths Nos. 18-20

Exhibit: Buda engines (oil); air filters; brake lining and packing.

NATIONAL TANK COMPANY
Tulsa, Oklahoma

Booth No. 232

Exhibit: Miniature field and tank farm, featuring national separators.

NORVELL-WILDER SUPPLY COMPANY
Beaumont, Texas

Booths Nos. 203-205-207-209-211-213-215-217-219; 302-304 306-308-310-312-314-316-318.

Representatives: E. W. Gildard, T. L. Lewis, Frank Carothers, R. L. Kennedy, H. F. Peebles, T. B. Darby, A. Colston, E. T. Thompson, W. H. Ward and E. W. Heinze.

WALTER O'BANNON COMPANY
Tulsa, Oklahoma

Booths Nos. 12-14.

Exhibit: Valve cups marked according to A.P.I. specifications. A new oversize insert pump, into which new and unique features have been incorporated. Cast iron plunger pump into which new ideas have been in-incorporated, according to the manufacturer. Safety sucker rod elevators; safety sucker rod hooks; safety tubing hooks; safety tubing spider and sucker rod sockets and polished rod clamps.

Representatives: Walter O'Bannon and R. E. Kengott.

OIL & GAS JOURNAL
Tulsa, Oklahoma

Booths Nos. 517-519.

OIL CENTER TOOL COMPANY
Houston, Texas

Booths Nos. 403-502.

Exhibit: OCT assembled and tested Christmas-trees; OCT casing heads; OCT tubing heads; OCT bradenheads; OCT high pressure forged steel fittings; OCT pumping crown blocks; OCT needle valve flow chokes; OCT pump liners; OCT pump rods; OCT self-sealing blow-out preventers; OCT quick-change flow choke assembly and OCT forged steel flange union.

OIL EQUIPMENT SALES CORPORATION
Houston, Texas

Booths Nos. 411-413-510-512.

Exhibit: Fischer gauge cocks, screen cleaners, Tex-Sand working barrels, wing unions, Thrift hydraulic casing pulling machine literature, Greenwood lubricated steam stopcocks, fluid end and steam end piston rod packing, Silver Top oil savers.

Representative: C. K. Stillwagon.

OIL FIELD ENGINEERING CORPORATION
Fort Worth, Texas

Booths Nos. 222-224-226.

Exhibit: OFECO wilcox wrist pins; OFECO sucker rod sockets; OFECO tubing sockets; OFECO wire line split stuffing boxes; OFECO back side crank pumping units; BAL-RE-NU horizontal ball and seat check valves and OFECO automatic chemical feeder.

Representatives: Jon R. Long and Tom Jackson.

THE OIL WEEKLY
Houston, Texas

Booths Nos. 417-419.

OKLAHOMA CITY CHAMBER OF COMMERCE
Oklahoma City, Okla.

Booths Nos. 621-623-625-627.

OSAGE METAL COMPANY, INC.
Oklahoma City, Oklahoma

Booth No. 214.

Exhibit: Osage inserts and Amalgamated rod and tube metal.

Representative: V. B. Likins.

PACIFIC PUMP WORKS, LIMITED
Huntington Park, California

Booths Nos. 206-208-210.

PATRICK TRANSFER & STORAGE COMPANY
Houston, Texas

Booths Nos. 507-509-511-513.

PATTERSON BALLAGH CORPORATION
Los Angeles, California

Booths Nos. 426-428-430.

PETROLEUM ECONOMIC SERVICE
Houston, Texas

Booth No. 613.

PETROLEUM ENGINEER
Dallas, Texas

Booth No. 117.

PETROLEUM EQUIPMENT COMPANY OF TEXAS
Fort Worth, Texas

Booths Nos. 222-224-226.

Exhibit: Nu Alloy balls and seats, Nu Alloy drops and seats, Nu Alloy polished rods, Nu Steel balls and seats, Nu Bronze balls and seats, Petro over-size standing valves, Peco polished rod clamps, Peco pull rod carriers, Petro safety lock traveling valves, Williamson automatic kick-off and flow valves, Robinson three-in-one tubing packers, Robinson gas anchor packers and Robinson trip wall packers.

Representatives: Jon R. Long and Tom Jackson.

PETROLEUM IRON WORKS OF TEXAS
Beaumont and Houston, Texas

Booth No. 414.

PETROLEUM WORLD
Los Angeles, California

Booths Nos. 201-300.

PIPE LINE NEWS
Bayonne, New Jersey

Booth No. 16.

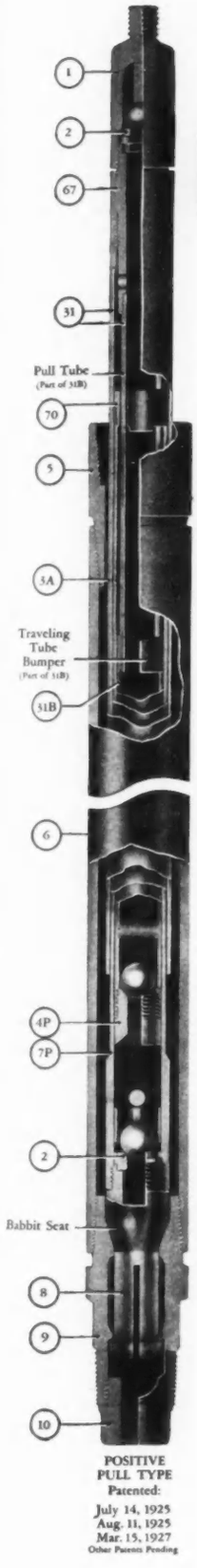
PORTABLE RIG COMPANY, INCORPORATED
Houston, Texas

Booths Nos. 404-406-408-410.

THE WM. POWELL COMPANY
Cincinnati, Ohio

Booth No. 116.

Exhibit: Valves and fittings for general oil well, field,



POSITIVE
PULL TYPE
Patented:
July 14, 1925
Aug. 11, 1925
Mar. 15, 1927
Other Patents Pending

An Improved FLUID PACKED PUMP *The* Positive Pull Type

THE POSITIVE PULL TYPE FLUID PACKED PUMP has been designed to meet a demand for positive pulling action in Fluid Packed Pumps. The entire pumping assembly is tied together, and goes in and comes out on the rods, eliminating the manually-operated hook-on device of the Removable Hook-on (Key) Type, which sometimes failed to function, necessitating another run with a spear and jars on the rods to secure the Standing Valve and the Standing Tube.

This improvement has required no change that adversely affects the many advantages of the Fluid Packed principle of construction. Results from many installations have proven its efficiency and ruggedness.

The use of the Positive Pull Type Tube Assembly requires no change in accessory parts—Jackets, Top Jacket Connections, Shoes, Mandrels, and Cages of the Removable Type are interchangeable.

An Inquiry to Our Closest Office Will Bring Further Information

FLUID PACKED PUMP COMPANY

BOX 64, LOS NIETOS **CALIFORNIA**

Mid-Continent and Texas Distribution

Fluid Packed Pump Co., *Mid-Continent*

2 Southeast 29th Street, Oklahoma City, Oklahoma

BRANCHES

Drumright, Seminole, Bristow, Ponca City, Oklahoma
Houston, Kilgore, Pampa, Texas
Shreveport, La. **Smackover, Ark.**

London Office: **Coventry House, South Place, London E. C. 2, England**

THE MODERN PUMP FOR MODERN CONDITIONS

and refinery service, and for gasoline service stations and bulk storage plants.

Representatives: E. K. Pierce, together with representatives of Republic Supply Company.

QUIGLEY COMPANY, INC.
New York, N. Y.

Booth No. 304.

Exhibit: Hytempite, high temperature cement, as well as other Quigley Refractory cements and plastics for furnace construction and maintenance. Applications of Q-SEAL for sealing joints in refinery pipe lines and equipment, will be shown graphically. Examples of oil refinery cleaning jobs performed with Annite cleaning materials, and uses of Quigley Triple-A protective coatings in the oil industry.

Representative: W. H. Gaylord, Jr.

RECTOR WELL EQUIPMENT COMPANY
Houston, Texas

Booth No. 231.

Exhibit: High pressure casing heads and bradenheads.

REGAN FORGE & ENGINEERING COMPANY
San Pedro, California

Booths Nos. 426-428-430.

REPUBLIC SUPPLY COMPANY
Houston, Texas

Booths Nos. 5-7-9-11-13-15-17-19-21; 104-106-108-110-112-114-116-118-120.

RIEBER INSTRUMENT COMPANY
Los Angeles, California

Booths Nos. 426-428-430.

RICE INSTITUTE
Houston Texas

Booths Nos. 624-626-628-630.

S. & K. MANUFACTURING COMPANY
Beaumont, Texas

Booth No. 412.

SEAL POWER CORPORATION
Muskegon, Michigan

Booths Nos. 18-20.

SHAFFER TOOL WORKS
Brea, California

Booths Nos. 503-505-602-604.

Exhibit: Cellar control gates, spool type heads, tubing heads, flow beans, bottom hole flow bean, vibrating mud-screen, stop cock, gate valves, fishing tools, formation tester.

Representatives: W. D. Shaffer and Carl W. Vogt.

SHELL PETROLEUM CORPORATION
Houston, Texas

Booths Nos. 543-642.

SINCLAIR REFINING COMPANY
Houston, Texas

Booths Nos. 145-244.

NOWERY J. SMITH COMPANY
Houston, Texas

Booth No. 232.

SMITH SEPARATOR COMPANY
Houston, Texas

Booth No. 200.

SOUTHERN STATES COMPANY
Shreveport, Louisiana

Booth No. 330.

SPECIALTY OIL TOOL COMPANY
Los Angeles, California

Booth No. 415.

SOUTHWESTERN GAS & ELECTRIC COMPANY
Shreveport, Louisiana

Booth No. 122.

STANDARD BRAKE LINING COMPANY
Los Angeles, California

Booths Nos. 206-208-210.

Exhibit: Standco draw works brake lining.

Representatives: Exhibit will be in charge of the Houston Oil Field Material Company.

STANDARD BRASS & MANUFACTURING COMPANY
Port Arthur, Texas

Booth No. 228.

TENNANT COMPANY
Houston, Texas

Booth No. 301.

THE TEXAS COMPANY
Houston, Texas

Booths Nos. 243-342.

TEXAS ELECTRIC STEEL CASTING COMPANY, INCORPORATED
Houston, Texas

Booth No. 229.

Exhibit: Steel castings.

TEXAS IRON WORKS
Houston, Texas

Booths Nos. 404-406-408-410.

Exhibit: Full hole fish tail bits, Christian fish tail bits, detachable blade fish tail bits, detachable jagger bits, casing heads, liner pullers, set shoe combinations, liner packers, liner packer setting tools, triple seal back pressure valves, tubing slips and spiders, rotary slips and adaptors, liner type rotary slips, drill stem safety valves, flow back valves, tubing drains, standing valves, wrist pins.

TEXAS OIL WELL SURVEYING COMPANY
Houston, Texas

Booth No. 311.

TEXAS RUBBER & SPECIALTY CORPORATION
Houston, Texas

Booths Nos. 405-407.

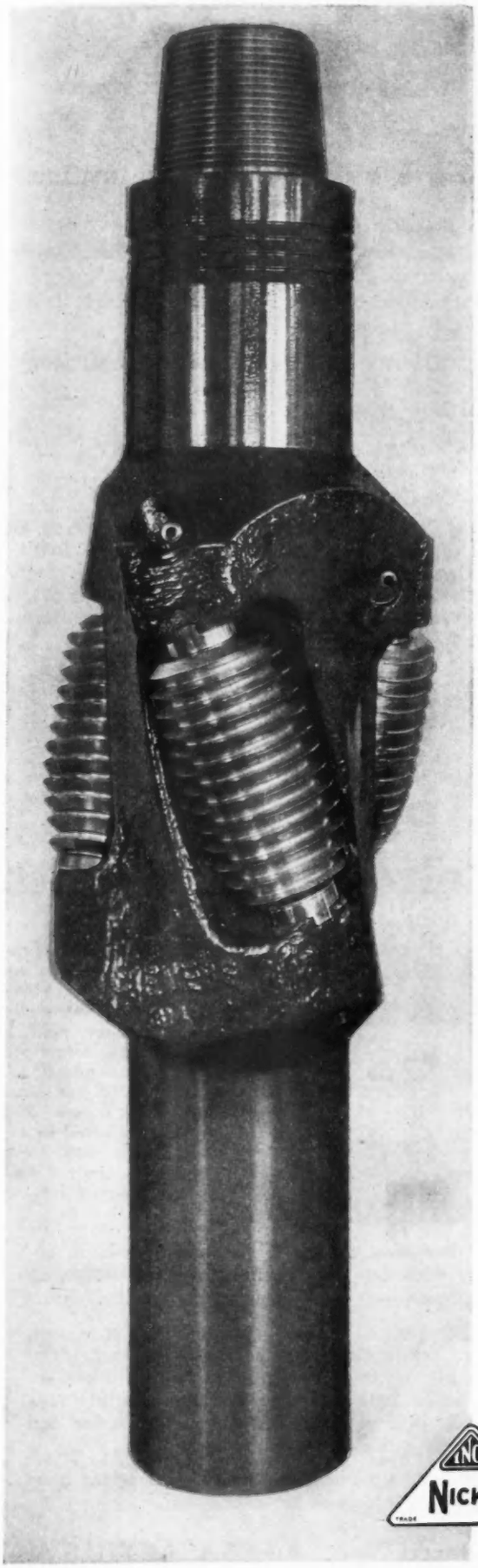
Exhibit: Rubber, chemicals, steel. Okeh slush pump piston and Okeh steel liners and rods. Rubber Products manufactured for oil tool manufacturers and general line of mechanical rubber goods and rubber as applied to the oil industry.

Representatives: J. W. Millmine, A. J. Martin and H. F. Dean.

TRANSPORTATION EQUIPMENT COMPANY
Houston, Texas

Booths Nos. 507-509-511-513.

Exhibit: Trailers, B-K vacuum power brakes for trucks, trailers, and passenger cars, Timken tubular trailer



● Sievers Reamer Bodies are cast from a special alloy steel containing 1.50% nickel. The cutters are forged from nickel-molybdenum steel S.A.E. 4615, or nickel-chromium steel S.A.E. 3115, case-hardened. Mfd. by SECURITY ENGINEERING COMPANY, Whittier, Cal.

THEY'RE TOUGH ...THEY'RE DEPENDABLE

...They're NICKEL ALLOY STEEL

Mother Earth doesn't give up her oil without a battle... a battle that tests the stamina of the hardest and toughest drilling materials. • The business-like reamer pictured at the left—made by the Security Engineering Company of Whittier, Cal.—is just as hardy as it looks because it is made of tough, shock-resisting and wear-resisting Nickel Alloy Steels. • When drilling parts are required to withstand heavy punishment Nickel Alloy Steels are specified. They tend to assure long life as a result of their resistance to wear and to breakage. • Our engineers are always ready to assist in the selection of suitable Nickel Alloy Steels to meet your requirements. Consult them when you are designing new tools and machinery.

NICKEL ALLOY STEEL

THE INTERNATIONAL NICKEL CO., INC.

Miners, refiners and rollers of Nickel.
Sole producers of Monel Metal.

67 Wall Street, New York, N. Y.

axles, Serive recorders for trucks, and oil tool specialties manufactured by Oil Tool Manufacturing Company.

Representatives: H. C. Maddux, of Timken-Detroit Axle Company; George E. Voglesong, district representative of the Bendix Products Corporation; R. F. Davis, of the Oil Tool Manufacturing Company, and J. L. Parker of the Transportation Equipment Company.

UNITED STATES DEPARTMENT OF COMMERCE
Houston, Texas

Booths Nos. 8-10.

UNITED GAS PUBLIC SERVICE COMPANY
Houston, Texas

Booths Nos. 143-242.

VISCO PRODUCTS COMPANY
Houston, Texas

Booths Nos. 324-326-328.

W. K. M. COMPANY, INCORPORATED
Houston, Texas

Booths Nos. 105-204.

WAUKESHA MOTOR COMPANY
Waukesha, Wisconsin

Booths Nos. 404-406-408-410.

J. A. WERME STEEL & IRON WORKS
Oklahoma City, Oklahoma

Outside exhibit: Erection of derrick.

WESTERN PNEUMATIC COMPANY
San Antonio, Texas

Booth No. 241.

WESSENDORFF NELMS & COMPANY
Houston, Texas

Booth No. 214.

WESTERN SAND-BANUM COMPANY, INC.
Houston, Texas

Booth No. 305.

Exhibit: Standard Sand-Banum for boilers; Emulsion Sand-Banum and Special Sand-Banum.

Representatives: Frank J. Welu, C. S. Spitler, L. J. Hewitt and W. O. Moore.

WHITNEY MANUFACTURING COMPANY
Hartford, Connecticut

Booths Nos. 416-418.

WILSON SUPPLY COMPANY
Houston, Texas

Booths Nos. 421-423-425-427-520-522-524-526.

Exhibit: Products of American Cable Company, New York; Byron Jackson Company, Los Angeles; Link Belt Company, Indianapolis; Lufkin Rule Company, Saginaw, Michigan; Security Engineering Company, Whittier, California; and Wilson-Snyder Corporation, Braddock, Pennsylvania.

WORLD PETROLEUM
New York, New York

Booths Nos. 201-300.

COLUMBIAN Sets the Pace in the Construction of BIG Bolted Steel Tanks

We don't ask you of the oil industry, to take our word for the above statement, because the Mid-Continent field is dotted with actual examples, of which the 27,500 barrel job shown to the left is one. This tank was erected by the purchaser's own workmen with never a leak in the finished job.

They said it couldn't be done . . . but Columbian did it! Built the first 1,000 barrel bolted tank to solve the big storage problem for you fellows. That was some years ago, of course. Then Columbian continued to be the pioneer in even larger tank construction, building the first 5,000 barrel tank, the first 10,000 barrel tank. Today Columbian is recognized as the pace setter . . . better meeting your every demand for bolted tanks from 50 to 27,500 barrel capacity.

You'll agree that there's a big advantage in the re-use value of Columbian Bolted Steel Tanks. The fact that they can be taken down, moved to another location and erected again makes your Columbian tank investment pay double dividends.

Accurately engineered to meet A. P. I. standards. Vapor pressure or stock tanks. Can be erected by your own workmen or Columbian expert crews are available. The Columbian floating deck will save its cost in a year by preventing evaporation and reducing explosion and fire hazards.

Complete plans, specifications and prices upon request. Write, wire or 'phone!

COLUMBIAN STEEL TANK CO. "Tanks for the World" KANSAS CITY, U.S.A.

AN INVITATION
to
Visiting Oil Operators

See A Complete Display
of
REED TOOLS
in the Lobby of our Main Office

R E E D

ROLLER BEARING CUTTER ROCK BITS
Greater cutting speed . . . more footage per run.

STRAIGHT HOLE ROLLER REAMERS
Straight full gauge hole.

HARD FORMATION ROLLER CUTTER CORE DRILLS
Higher Core recovery.

SOFT FORMATION (Elliott type) CORE DRILLS
Proven dependability in coring operations.

BARRETT - ROBISHAW DRILLING-CORING BITS
Cores recovered without pulling drill stem.

WIRE LINE (Collapsible blade) DRILLING-CORING BITS
Bits and core barrel changed without pulling drill stem.

REPLACEABLE BLADE FISHTAIL BITS
For economy in drilling operations.

FULL-HOLE TOOL JOINTS
A new deal in tool joints.

MILLING TOOLS, DRILL COLLARS, CASING ROLLERS, Etc.

PHONE W-3121

and we will send a car for you.

or

DRIVE out to our plant at the corner of Mack Street and Avenue Q.

Visit these

R E E D

DEPARTMENTS

ENGINEERING
Efficient common-sense design.

METALLURGICAL
Correct specifications.

MANUFACTURING
Accurate machining.

HEAT TREATING
Uniformity in tough hardness.

INSPECTION
Assurance of Perfection.

REED ROLLER BIT CO.

P. O. BOX 2119, HOUSTON, TEXAS, U. S. A.

Export Office:
150 BROADWAY
NEW YORK, N. Y.

1317 ESPERANZA ST.,
LOS ANGELES, CALIF.

Main Plant:
HOUSTON, TEXAS

Branches at:
KILGORE, TEXAS
LAKE CHARLES, LA.

London Office:
COVENTRY HOUSE, SOUTH PLACE,
LONDON, E. C. 2

1129 SOUTHWEST 29TH ST.,
OKLAHOMA CITY, OKLA.

Distributed through Supply Companies Everywhere

Mid-Continent and Gulf Coast Distributor for MARTIN-DECKER PRODUCTS **Pacific Coast Distributors for MISSION MANUFACTURING PRODUCTS**

Special assembly of

WILSON-SNYDER BOILER FEED PUMPS

gives

Greater efficiency
more economy
better service

•

•

A major Gulf Coast company has developed the complete boiler feed and lighting unit shown in the two pictures opposite.

The complete unit, consisting of two 7x4½ x10 Wilson-Snyder Pumps and two turbo generators weighs less than 7000 pounds and can be moved complete on an oil field truck.

The only work involved in connecting or disconnecting the unit is hooking-up four 2" unions and two suction flanges. Obviously this saves much time and labor as compared to the customary method of setting-up pumps. It also saves much loss and breakage of material, as all connections are inside the skids.

Every connection as well as all parts of the unit are openly accessible. There is no obstruction to valves and lines. Changes are easily and quickly made.

The unit can be connected either right or left hand by simply transposing the nipple, unions and bull plugs from one end to the other.

Blue prints showing the assembly in detail are available to those caring to utilize this efficient, economical method of slush pump set-up.

Be sure to visit our display of Wilson-Snyder Pumps at the "Oil Exposition" in Houston, May 22 to 28.

•

WILSON-SNYDER PUMP SALES AND SERVICE ON THE GULF COAST BY

WILSON SUPPLY COMPANY

1412 Maury St.
Houston, Texas

OIL and GAS WELL SUPPLIES

BRANCHES
Barbers Hill, Kilgore, Joinerville, Gladewater, Conroe, Texas, and Shreveport, La.

MARKETS — STATISTICS

Slight Reduction in East Texas from Peak of Week Ago and Declines in Oklahoma and Kansas Bring Production Down; Prices Ruling Firm.

Production Slightly Down From Peak of Week Ago

CRUDE oil production of the United States during the week ending May 20 was down slightly as compared with the previous week, but since the week of May 13 had represented an all-time peak, with the East Texas field largely responsible, the new production figure was still at an abnormally high level.

Exclusive of oil produced in the East Texas field in excess of the official allowable, and thus counting only the 807,000 barrels daily output recorded there, the nation's production for the week of May 13 had been 2,733,155 barrels daily, a record high mark. (Conservative estimates on actual production in the East Texas field indicated average daily output in that area alone of 1,025,000 barrels, and if that figure is employed the United States total is increased to 2,951,155 barrels daily, an even more pronounced all-time peak).

For the week ending May 20, however, there was a slight slackening of the deluge of production in the big East Texas field, and Oklahoma and Kansas also registered small declines; and in consequence the United States total average 2,698,470 barrels daily, or 34,685 barrels less than the previous record week, again counting only 807,000 barrels daily of recorded production in East Texas. (Conservative estimates indicate that actual production in the East Texas field averaged approximately 998,000 barrels daily during the week, and if that estimate is used the United States total is indicated to have been 2,889,470 barrels daily).

Texas outside of the East Texas field showed a decline of about 8000 barrels during the week ending May 20, with decreases recorded in practically all sections of the state, and the Panhandle and North Texas areas registering the most conspicuous declines. The state total was 1,363,050 barrels daily for the week of May 20 as compared with 1,371,525 barrels daily the previous week (in each instance counting only the recorded production of 807,000 barrels daily for the East Texas field, which is the official allowable).

California production has continued increasing, the average for the week of May 20 being 485,000 barrels, a gain of 7000 barrels over the level of the previous week. That increase was the result of small gains in various fields, including Kettleman Hills and Ventura Avenue.

Oklahoma production showed a 23,000-barrel decline for the week ending May 20 in averaging 461,160 barrels daily, despite an important gain in the Seminole district, the Oklahoma City field declining considerably more than Seminole gained. The average daily output for Oklahoma City in the new week was 160,750 barrels daily, as against 195,710 barrels daily the previous week; while the Seminole area's new average was 129,740 barrels daily as compared with 117,105 barrels the preceding week.

Kansas registered a 5000-barrel decrease in its rate of production in averaging 110,360 barrels daily in the week of May 20.

THE OIL WEEKLY

Estimated Average Daily Production of Crude Oil, in Barrels

District or State	Week Ending May 20	Week Ending May 13
TEXAS—		
Texas Panhandle	43,650	47,100
North and West Central Texas	72,875	75,200
West Texas	159,850	161,025
East Central Texas	58,500	58,500
East Texas Field	*807,000	**807,000
South Texas	48,225	49,050
Total Texas outside Gulf Coast	1,190,100	1,197,875
Texas Gulf Coast	172,950	173,650
Total Texas	1,363,050	1,371,525
OKLAHOMA—		
Oklahoma City	160,750	195,710
Seminole Area	129,740	117,105
Others	170,670	171,305
Total Oklahoma	461,160	484,120
KANSAS—		
Ritz-Decker	18,650	20,700
Voshell	6,100	7,040
Others	85,610	88,120
Total Kansas	110,360	115,860
LOUISIANA—		
North Louisiana	27,275	27,950
Louisiana Gulf Coast	42,000	42,200
Total Louisiana	69,275	70,150
ARKANSAS	29,925	29,900
CALIFORNIA—		
Long Beach	73,000	73,000
Santa Fe Springs	54,500	55,000
Huntington Beach	29,500	29,500
Dominguez	19,200	18,200
Inglewood	12,100	12,100
Ventura Avenue	33,200	32,300
Seal Beach	11,400	11,200
Midway-Sunset	47,000	47,000
Elwood	13,400	13,300
Kettleman Hills	63,000	61,000
Playa del Rey	11,800	11,300
Others	116,900	114,100
Total California	485,000	478,000
MOUNTAIN STATES—		
Wyoming	30,950	30,950
Montana	5,900	5,950
Colorado	2,650	2,400
New Mexico	36,050	36,000
Total Rocky Mountain States	75,550	75,300
EASTERN STATES	87,750	91,700
MICHIGAN	16,400	16,600
Total United States	2,698,470	2,733,155

*Reported production only. Actual output, including excesses above allowable, estimated at 998,000 barrels daily.

**Reported production only. Actual output, including excesses above allowable, estimated at 1,025,000 barrels.

California Prices Hold; Wholesale Gasoline Strong

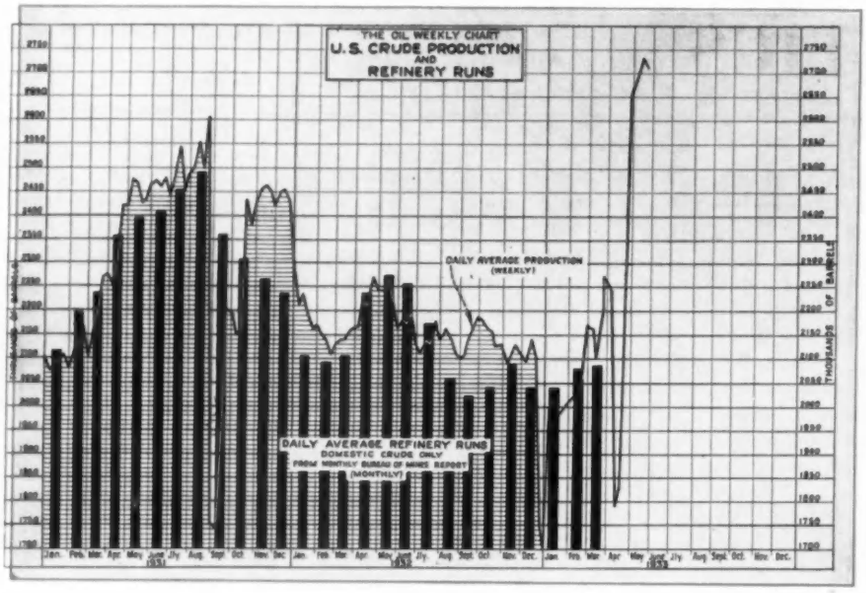
CALIFORNIA markets are withstanding the assaults made on it in an indirect way through the influence of very low Mid-Continent prices. A special effort is being made to ride out the storm until a stronger tone prevails in other districts. With an overproduction of only 30,000 barrels daily, the surplus is being absorbed with the hope that conditions will improve.

Major companies are known to feel more optimistic about the future for the second six months of the year, but the unexpected has happened so much in California that they are not too sure of their position. It will be only a question of time until the flood of oil from the Mid-Continent and lower prices will at least indirectly affect quotations on the Pacific Coast. Interests working on both ends of the curtailment program believe that an improvement will take place in Texas in time to save the West Coast.

California is no longer an isolated district, and realizes it. Many of its markets are found in border territories which might be supplied from other fields. Some of the Atlantic Seaboard trade has been lost because of lower prices prevailing in other producing districts.

California gasoline has a good record for its anti-knock qualities, but cracking in other districts has increased the quality of all good gasolines until the natural qualities of the West Coast product has been offset by artificial qualities instilled through cracking oils which formerly made low octane gasoline through straight run processes.

The retail gasoline market has not weakened, and wholesale prices have been a shade stronger. Price cutters



have moved up with price advances posted by leading companies.

Fuel oil remains a problem, but kerosenes, Diesels and some of the intermediate products have been moving at a fair price. California crude does not make a large percentage of engine oil.

Group 3 Refined Market Holding Fairly Steady

REPORTS from Mid-Continent market observers stated that practically no East Texas material was being offered in the Group 3 area and as a result the market maintained a fairly steady pace during the week. Another favorable factor was the beginning of brokers to buy for increased seasonal demand. Many resellers had held off buying because of the expected influence of low priced crude. Control of the East Texas situation by large coastwise shipments, refusal of the Kansas Corporation Commission to grant additional allowables and a like move by producers in the Oklahoma City pool prevented excess supply of oil and appeared to greatly strengthen the market. In the refined gasolines open market buying continued light. Many jobbers were said to be securing their requirements at from a quarter to one half-cent below the open market price on marginal guarantee contracts some of which are said to guarantee five cents margin below service station prices. Going prices based on Group 3, Oklahoma, appeared to be as follows:

Refinery Gasolines

Low octane U. S. Motor fuel, 2 to 2⅛ cents; middle octane, 2⅛ to 2⅜ cents; high octane, 2½ to 2⅝ cents; 60-62, 400 e.p., 2⅛ to 2¼ cents; 64-66, 390 e.p., 2¼ to 2⅜ cents; 64-66, 375 e.p., 2½ to 2⅝ cents; 68-70, 350 e.p., 2⅝ to 2¾ cents.

Kerosenes

The 41 to 43 gravity, water white, 2¼ to 2⅜ cents; 42 to 44 gravity, 2⅜ to 2½ cents; and 44 to 46 gravity, 2¾ to 2⅞ cents.

Low Crude Price Stores Much West Texas Oil

San Angelo, Texas.—Withdrawal of large quantities of daily production from the market in West Texas has followed in the wake of the 20-cent price posting by all major companies. Operators prefer to store crude to be held for a price more commensurate with lifting costs, and are seeking large tanks for this purpose. Refusal to sell all or part of current production will not endanger pipe line outlets over the future, as the purchasing companies and producers are working in harmony in the district.

Simms Oil Company began storing 1825 barrels of its 3300 barrels daily allowance in the Yates field effective May 15. The company has three conveniently located 55,000-barrel steel tanks in the field, and expects to fill same should the price remain at a low level. The California Company, major producer in the field, is reported to be planning to fill its large tank in the field to hold the oil for a better price.

Gulf Production Company, owner of 8386 barrels of allowable production that is going to Shell Petroleum Corporation and Humble Oil & Refining Company, has given the required 30-days notice of its intentions to remove the oil from the market by storing same in the district. Gulf Production Company has also started storing 2100 barrels of daily production held in Winkler County because of the oil only bringing 20 cents per barrel from an outside connection.

Continental Oil Company is also reported to be taking steps toward impounding a portion of its production because of the low price, but will have same transported via common carrier lines to Texas City, where it has about 800,000 barrels of idle tankage available.

Humble Paying Going Price, Ends Private Proration

Tyler, Texas.—Confronted with a threatened loss of a high percentage of its outside connections to other majors now seeking to line up additional supplies of crude, Humble Oil & Refining Company resumed full payment on crude run from outside leases effective May 13 after having enforced a part payment and storage policy for eight months. The announcement also stated that on the above date the company would substitute a "going price" for a straight posting of 25 cents per barrel, and that it was ready to buy in all storage oil held in Humble Pipe Line Company's system at the latter price, provided producers submitted their approval by May 25. Instead of charging its posted storage tariff of two cents per barrel monthly the company offers to lower the charge 50 per cent for all oil impounded for more than one month.

Humble Oil & Refining Company has been diverting to storage at the expense of the producer from 50 to 25 per cent of the well allowables since September 12, 1932. It has been paying for 75 per cent and storing 25 per cent since January 1. Offers to buy in from 20 to 25 per cent of the impounded oil have been made by the company at intervals, but in each instance in the past two cents per barrel monthly has been deducted for storage. The majority of the major purchasers in the field were paying $1.10 per barrel when this part payment plan went into effect. The value of the oil stored gradually receded to 10 cents per barrel, or less than the accumulated storage charges on oil that had been impounded more than five months.

All other majors in the field avoided the part payment and storage policy because of the storm of protests raised by affected producers and royalty owners.

Crude Runs to Stills, Motor Fuel Stocks, Gas and Fuel Oil Stocks and Cracked Gasoline Production, Week Ended May 13, 1933

(Figures in barrels of 42 gallons each)

DISTRICT	Daily Refining Capacity of Plants			Crude Runs to Stills		MOTOR FUEL STOCKS				Gas and Fuel Oil Stocks	Daily Charging Capacity of Cracking Units			Cracked Production Daily Average
	Potential Rate	Reporting		Daily Average	% Operated	(a) At Refineries	Bulk Term., in Transit & Pipe Lines	(b) Other M. F. Stocks	Total Motor Fuel		Potential Rate	Reporting		
		Total	%									Total	%	
East Coast	644,700	638,700	99.1	483,000	75.6	5,977,000	10,576,000	100,000	16,653,000	6,405,000	344,400	326,400	94.8	86,000
Appalachian	144,700	135,000	95.0	97,000	71.9	1,479,000	548,000	115,000	2,142,000	876,000	59,100	57,600	97.5	29,000
Ind., Ill., Ky	434,900	424,000	97.5	310,000	73.1	5,926,000	2,575,000	42,000	8,543,000	3,689,000	341,400	328,200	96.1	101,000
Okla., Kans., Mo	459,300	390,000	84.9	214,000	54.9	3,294,000	1,429,000	245,000	4,968,000	3,057,000	257,400	238,100	92.5	54,000
Inland Texas	315,300	177,700	56.4	92,000	51 8	1,160,000	184,000	247,000	1,591,000	2,134,000	117,300	95,100	81.1	22,000
Texas Gulf	555,000	542,000	97.7	448,000	82.7	5,203,000	278,000	215,000	5,696,000	6,035,000	506,500	495,500	97.8	98,000
Louisiana Gulf	146,000	142,000	97.3	103,000	72.5	1,185,000	339,000	.....	1,524,000	1,920,000	74,400	74,400	100.0	19,000
North La.,—Ark.	89,300	79,000	88.5	39,000	49.4	218,000	71,000	30,000	319,000	591,000	29,500	25,500	86.4	9,000
Rocky Mountain	152,000	138,000	90.8	36,000	26 1	1,290,000	.....	29,000	1,319,000	641,000	71,400	68,100	95.4	12,000
California	915,100	866,100	94.6	421,000	48.6	7,148,000	4,334,000	2,482,000	13,964,000	97,960,000	197,700	197,700	100.0	48,000
TOTALS WEEK: May 13, 1933	3,856,300	3,532,500	91.6	2,243,000	63.5	32,880,000	20,334,000	3,505,000	56,719,000	123,308,000	1,999,100	1,906,600	95.4	478,000
May 6, 1933	3,856,300	3,532,500	91.6	2,238,000	63.4	33,769,000	19,672,000	3,500,000	56,941,000	123,153,000	1,999,100	1,906,600	95.4	458,000

Below are set out estimates of Crude Runs and Motor Fuel Stocks on B. of M. Basis for Week May 13, 1933, compared with certain May 1932 Bureau figures.

Estimate B. of M. Basis Week May 13, 1933	2,365,000	(c)	33,680,000	21,035,000	3,505,000	58,220,000		510,000
U. S. B. of M. May 1932 Figures:—		5/1	42,054,000	22,412,000	4,345,000	68,811,000		
May 1932 Daily Average Crude Runs	2,409,000	5/31	40,611,000	24,254,000	4,270,000	69,135,000	May 1932 Daily Average Cracked Prod.	494,000

(a) Stocks at refineries only: figures are now available permitting the inclusion under the proper headings of "At Refineries" and "At Bulk Terminals and in Transit" of the gasoline and engine distillate stocks in California which have previously been reported under the one heading of "At Refineries".

(b) Estimated. Includes unblended natural gasoline at refineries and plants, also blended motor fuel at plants.

(c) Estimated to permit comparison with A. P. I. Economics Report which is on Bureau of Mines basis.

East Texas Crude Prices Hold Near Official Scale

Tyler, Texas.—Purchasers of spot crude in the East Texas field are forced to pay nearer the posted price applying to the field than at any time within a year, or more, due to tightening of proration restrictions through filing of court injunctions and threat of receiverships against chronic violators. An average price of 22½ cents per barrel for oil loaded aboard cars prevailed late last week, with quotations ranging from 20 to 25 cents, depending upon the loading point and conditions under which the oil is produced.

Demand for spot oil in single car and train load lots continues brisk, even though some regular brokers have reached the saturation point on their lease storage and tanker terminals at tidewater. New entrants into the field as operators of short gathering lines and loading racks have made oil buying by independents more competitive.

Instances whereby major companies have undersold independent brokers of East Texas crude in filling tanker orders on the Texas Gulf Coast have come to light lately. This is possible through the latter having to pay 27.35 cents per barrel railroad freight on tank car shipments, exclusive of gathering and tanker terminal charges, while the majors have the advantage of a trunk line tariff of only 20 cents per barrel, exclusive of gathering and boat loading charges.

It is now apparent that many majors not capable of buying and transporting crude direct in the East Texas field to the extent of their demands under the low price arrangement are buying in large quantities of oil in tanker lots at tidewater from independent brokers. For a period the majors considered such purchases as unethical because of the bulk of such crude being produced in violation of proration.

Comparison of Permits Granted For New Wells

State	For week ending May 13	Total this month	Total this year	Total this date last year	1932 year total
Arkansas	0	0	28	8	33
California	6	10	98	139	354
Louisiana	14	23	175	173	451
Kansas	13	19	202	212	463
Michigan	3	6	90	45	183
Oklahoma	21	46	369	406	1054
Texas	61	184	2086	3031	7099
Total	118	288	3048	4014	9637

Barnsdall Builds System To Purchase in East Texas

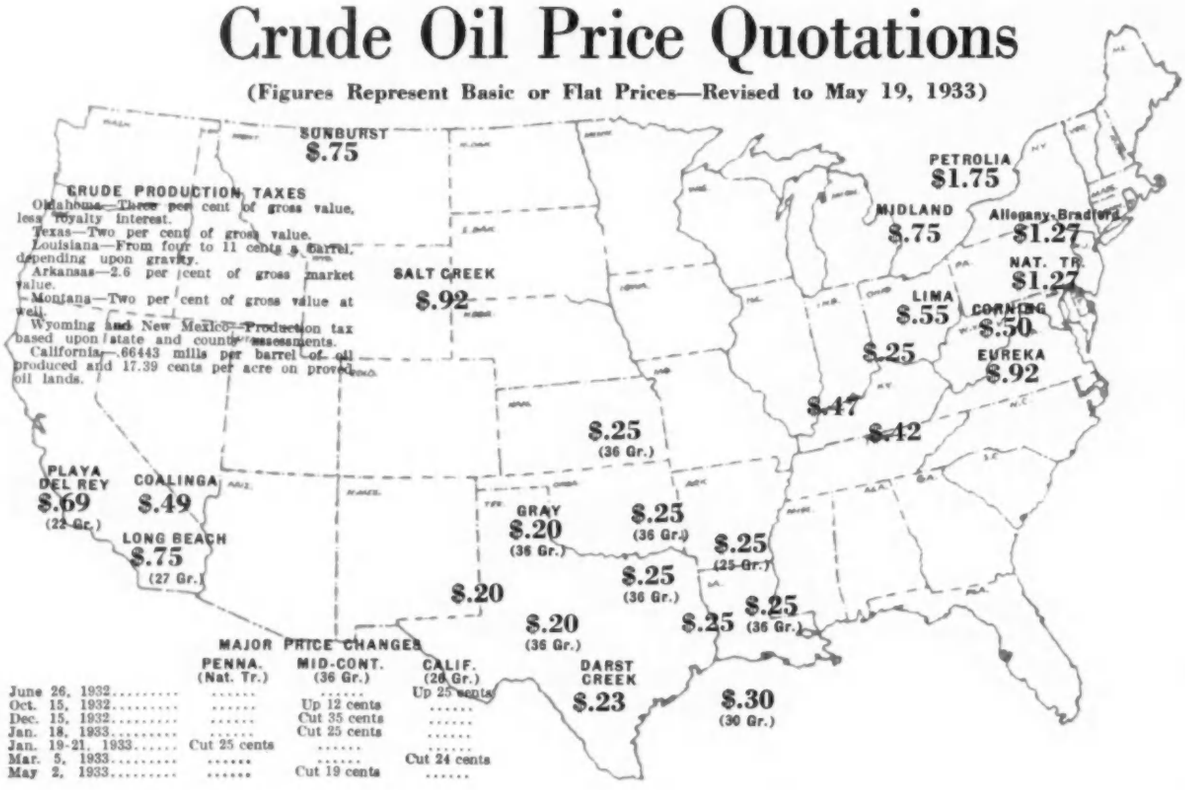
Longview, Texas.—Barnsdall Oil Company, important producer in the East Texas field, is planning to become a permanent buyer of oil in the district upon the completion of its gathering system in the north portion of the field. The company is also erecting a 25-car rack near Camps Switch on the Texas & Pacific Railroad, and two 80,000-barrel steel tanks on a nearby site.

Summarized Review of Week's Field Results

State	Completions	Oil wells	Gas wells	Failures	Init. prod.
Arkansas	1	0	0	1	0
California	10	9	0	1	12,275
Illinois	0	0	0	0	0
Indiana	0	0	0	0	0
Kansas	7	3	1	3	609
Kentucky	5	4	0	1	48
Louisiana	7	3	0	4	2,671
Michigan	4	4	0	0	540
Mississippi	0	0	0	0	0
New Mexico	0	0	0	0	0
New York	2	2	0	0	10
Ohio	6	0	5	1	0
Oklahoma	33	20	3	10	16,805
Pennsylvania	14	12	1	1	71
Texas	96	54	8	34	171,585
West Virginia	0	0	0	0	0
Miscellaneous	0	0	0	0	0
Totals	185	111	18	56	204,614

Crude Oil Price Quotations

(Figures Represent Basic or Flat Prices—Revised to May 19, 1933)



MAJOR PRICE CHANGES

	PENNA. (Nat. Tr.)	MID-CONT. (36 Gr.)	CALIF. (26 Gr.)
June 26, 1932	.....	.....	Up 25 cents
Oct. 15, 1932	.....	Up 12 cents	.....
Dec. 15, 1932	.....	Cut 35 cents	.....
Jan. 18, 1933	.....	Cut 25 cents	.....
Jan. 19-21, 1933	Cut 25 cents	.....	.....
Mar. 5, 1933	.....	.....	Cut 24 cents
May 2, 1933	.....	Cut 19 cents	.....

Oklahoma and Kansas: effective May 6, 1933, flat price 25 cents; except Magnolia, May 9, 1933, below 28 gravity, 20 cents, 28 to 34.9 gravity 23 cents, and 35 gravity and above 25 cents.

North and Central Texas: Effective May 2, 1933, flat price 25 cents

East Texas: Effective April 26 to May 10, 1933, flat price 25 cents.

Corsicana, Texas, Heavy: Magnolia, effective May 8, 1933, 20 cents.

Texas Panhandle: Effective May 2, 1933, Gray County crude 20 cents and Carson and Hutchinson County crudes 18 cents.

West Texas and New Mexico: Effective May 2, 1933, flat price 20 cents. Includes crude from Crane-Upton, Crockett, Ector, Howard-Glasscock, Mitchell, Pecos, Jones, Fisher and Winkler Counties, Texas, and Lea County New Mexico.

Gulf Coast: Effective May 2, 1933, flat price 30 cents. Includes Texas and Louisiana Coastal fields.

Conroe, Texas: Effective May 2, 1933, Humble and Texas, 30 cents; May 5, 1933, Tide Water, 40 cents.

South Texas:

Darst Creek: Effective May 2, 1933, 23 cents. **Luling:** Magnolia, effective May 8, 1933, 20 cents. **Salt Flat:** effective May 2, 1933, 23 cents. **Lytton Springs:** Magnolia, effective May 8, 1933, 25 cents. **Mirando:** effective May 2, 1933, 25 cents. **Pettus:** effective May 2, 1933, 35 cents. **Refugio Heavy:** effective May 2, 30 cents. **Refugio Light:** same as Gulf Coast. **Saxet:** effective May 3, 1933, 30 cents.

North Louisiana and Arkansas:

Caddo, Homer, Haynesville, Bull Bayou, Sabine, Crichton, DeSoto-Red River, Cotton Valley, Sarepta, Cartersville, Pine Island, El Dorado, Rainbow Light: effective May 3, 1933, 25 cents.

Urania: Effective May 6, 1933, Louisiana Oil Ref. Corp., 15 cents.

Smackover: Effective Jan. 20, 1933, by Standard and Magnolia, and May 3 and 5 by Texas and Gulf, respectively, 20 cents. Effective Jan. 20, 1933, by Louisiana Oil Refining Co., 25 cents.

Rocky Mountain States: (Effective December 16, 1932).

Salt Creek: Below 29 gravity 76 cents; 29-29.9 gravity 78 cents with differential of 2 cents each degree to 40 and above. Top price $1.00.

Elk Basin and Grass Creek: 87 cents; **Big Muddy:** effective Jan. 24, 1933, 50 cents; **Lance Creek:** 92 cents; **Rock Creek:** effective Jan. 24, 1933, 46 cents; **Sunburst:** effective November 7, 1932, 75 cents; **Osage:** 98 cents; **Cat Creek:** $1.20; **Pondera:** 90 cents; **Hogback, New Mexico:** 80 cents.

Mid-Western States: (Effective May 9, 1933.)

Lima: 55 cents; **Indiana:** 25 cents; **Illinois:** 47 cents; **Princeton:** 47 cents; **Wooster:** 50 cents; **Western Kentucky:** 42 cents.

Pennsylvania: (Effective Jan. 21, 1933).

Bradford District: $1.47; National Transit Oil: $1.47; Southwest Pennsylvania Pipe Line Oil: $1.17; Eureka Pipe Line Oil: $1.12; Buckeye Pipe Line Oil: 97 cents; Corning Crude: 70 cents.

Michigan: (Dec. 31, 1932). **Midland:** 95 cents. **Muskegon:** 76 cents to $1.00.

Canada: (Effective Jan. 18, 1933). **Petrolia:** $1.75; **Oil Springs:** $1.82.

California—Posted by Standard Oil Company and Union Oil Company. Effective March 5, 1933, at 7:00 a.m.

Gravity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
14-14.9	$ .55	$ .55	$ .55	$ .55	$ .55	$ .55	..	..	$ .55	$ .55	$ .55	$ .55	$ .55	..	$ .49	$ .49	$ .49	$ .49	$ .49	$ .55	..
15-15.9	.55	.55	.55	.55	.55	.55	..	..	.55	.55	.55	.55	.55	..	.49	.49	.49	.49	.49	.55	..
16-16.9	.55	.55	.55	.55	.55	.55	..	..	.55	.55	.55	.55	.55	..	.49	.49	.49	.49	.49	.55	$ .49
17-17.9	.55	.55	.58	.58	.58	.58	..	..	.57	.56	.57	.55	.55	..	.49	.49	.50	.49	.49	.55	.49
18-18.9	.57	.55	.61	.61	.60	.61	..	..	.59	.58	.59	.55	.57	..	.49	.49	.52	.49	.49	.55	.49
19-19.9	.59	.57	.63	.64	.62	.64	..	..	.61	.61	.61	.55	.59	..	.49	.49	.54	.49	.49	.55	.49
20-20.9	.61	.59	.64	.67	.64	.66	..	..	.62	.63	.63	.55	.61	..	..	.52	.56	.49	.49	.56	.52
21-21.9	.63	.62	.66	.69	.66	.68	..	..	.64	.66	.65	.55	.63	$ .57	..	.55	.58	.51	.50	.57	.55
22-22.9	.65	.64	.68	.71	.69	.70	..	..	.66	.68	.67	.57	.65	.59	..	.57	.60	.53	.52	.58	.57
23-23.9	.67	.67	.70	.73	.71	.72	..	..	.68	.70	.69	.60	.67	.62	..	.60	.62	.55	.54	.59	.60
24-24.9	.69	.69	.72	.75	.73	.73	$ .65	..	.70	.73	.71	.62	.69	.64	..	.63	.63	.57	.56	.60	.63
25-25.9	.71	.72	.74	..	.75	.75	.68	..	.72	.75	..	.65	.71	.66	..	.66	.65	.59	.58	.61	.66
26-26.9	.73	.74	.75	..	.77	.77	.70	..	.73	.77	..	.68	.72	.69	..	.68	.67	..	..	.63	.68
27-27.9	.75	.76	.77	..	.79	.79	.73	..	..	.80	..	..	.74	.71	..	.71	.69	..	..	.65	..
28-28.9	.77	.79	.79	..	.81	.81	.75	..	..	.82	..	..	.76	.73	..	.74	.71	..	..	.67	..
29-29.9	.79	.81	.81	..	..	..	.78	..	..	.84	..	..	.78	.76	..	.76	.73	..	..	.69	..
30-30.9	.81	.84	.83	..	..	..	.81	..	..	..	..	..	.80	.78	..	.79	.75	..	..	.71	..
31-31.9	..	..	..	..	..	..	.83	..	..	..	.22	..	.82	.80	..	.82	..	..	..	..	..
32-32.9	..	..	..	..	..	..	.86	..	..	..	.22	..	.84	.83	..	.85	..	..	..	..	..
33-33.9	..	..	..	..	..	..	..	$ .83	..	..	.66	..	.86	.85	..	.87	..	..	..	..	..
34-34.9	..	..	..	..	..	..	..	.85	..	..	.68	..	.88	.87	..	..	..	..	..	..	..
35-35.9	..	..	..	..	..	..	..	.87	..	..	.70	..	..	.90	..	..	..	..	..	..	..
36-36.9	..	..	..	..	..	..	..	.89	..	..	.72	..	..	.92	..	..	..	..	..	..	..
37-37.9	..	..	..	..	..	..	..	.91	..	..	.74	..	..	.94	..	..	..	..	..	..	..
38-38.9	..	..	..	..	..	..	..	..	..	..	.76	..	..	.96	..	..	..	..	..	..	..
39-39.9	..	..	..	..	..	..	..	..	..	..	.78	..	..	..	..	..	..	..	..	..	..

Subject to field gathering charge of 5c per barrel.

1—Signal Hill. 2—Seal Beach, Alamitos Heights, Union posts to 26 at 74 cents. 3—Huntington Beach, Union posts through 26 at 75 cents. 4—Inglewood. 5—Playa del Rey, Union posts from 19, 62 cents, through 26 at 77 cents. 6—Olinda-Brea Canyon. 7—Athens-Rosecrans, Dominguez, Union posts through 35 gravity, 90 cents. 8—Elwood Terrace. 9—Torrance, Union posts only through 25 gravity. 10—Richfield. Union posts only through 25 gravity. 11—Whittier-LaHabra. 12—Montebello, Union posts only through 25 gravity. 13—Coyote Hills, Union posts only from 14 through 24 gravity. 14—Santa Fe Springs, Union posts only 24 through 35 gravity. 15—Newhall, McKittrick, Kern River. (See 16). 16—Midway-Sunset, Elk Hills, Buena Vista Hills, Union quotes 44 cents through 13 gravity and stops at 30 gravity, 79 cents. Union schedule applies this price to fields listed under 15. 17—Lost Hills, Union quotes 44 cents through 13 gravity. 18—Coalinga, Union quotes 44 cents through 13 gravity. 19—Wheeler Ridge, Union only. 20—Santa Paula, Union only. 21—Kettleman Hills.

Imports of Oils Into U. S. Show Substantial Gain

IMPORTS of crude and refined oil at principal United States ports for the week ended May 13 totaled 823,000 barrels, a daily average of 117,571 barrels against 77,286 barrels daily the previous week and 122,179 barrels daily for the four weeks ended May 13. These figures were supplied by the American Petroleum Institute.

The 823,000-barrel total included 132,000 barrels received at Baltimore, 68,000 barrels at Boston, 344,000 barrels at New York, and 279,000 barrels at Philadelphia; and it included 798,000 barrels crude oil and 25,000 barrels fuel oil.

For the week of May 13 receipts of California oil, crude and refined, at Atlantic and Gulf Coast ports amounted to 25,000 barrels—all being kerosene received at New York. That amount represented a daily average of 3571 barrels compared with 54,286 barrels daily the previous week and 39,929 barrels daily for the four weeks ended May 13.

East Texas Rail Movement Drops 200 Cars Daily

Kilgore, Texas.—Tank car shipments of crude from the East Texas field, carried on exclusively by independents, had receded to about 700 cars daily towards the end of last week, or about 200 cars less than the averages being maintained one week previous. The drop can be traced partically to a number of heavy shippers having booked space in a major company controlled trunk line system to the Texas Gulf Coast, thereby saving on transportation costs.

The co-operative day and night count on tank cars departing from the field for the four-day period ending May 17 revealed an average movement of 873 cars daily. However, these figures also included shipment of gasoline and other refined products departing from refineries in the district.

Commission Reports Output Above Allowable

Austin, Texas.—Records of the Texas Railroad Commission indicate that production from the East Texas oil field averaged 922,009 barrels daily for the week ending May 15.

Of this amount, 652,128 barrels were taken out by the pipe lines; 126,241 barrels went out in tank cars; 55,429 barrels were used in local refineries; and the daily average pipe line storage increase amounted to 88,211 barrels.

The daily allowable during the period was 806,495 barrels, with a consequent overproduction of 115,514 barrels reported by the commission.

Records of the commission on East Texas production for the first quarter of 1933 show that a total of 44,090,666 barrels was produced, a daily average of 489,898 barrels.

Of this amount, 36,342,056 barrels were moved by pipe line; 3,600,220 barrels were shipped in 16,275 tank cars; 2,969,627 barrels were consumed in local refineries; and 578,763 barrels placed in pipe line storage in the field.

This storage mounted from 2,003,878 barrels on January 1, to 2,582,635 barrels on April 1.

Move to Prevent Storing Oklahoma Oil at Low Price

Oklahoma City. — In an effort to break the voluntary withholding of Oklahoma City crude oil from the market at present prices, several purchasers were reported offering bonuses of five to 10 cents a barrel above the 25-cent posting. Petroleum Pipe Line Company was offering 10 cents a barrel bonus for an additional 7500 barrels daily and others were reported offering five cents on smaller amounts. After a stormy session which lasted most of the day on Tuesday, May 16, the Oklahoma Corporation Commission continued until May 24 the question of additional allowables for the Oklahoma City pool. In support of Sinclair Prairie Oil Marketing Company's petition for an additional 60,000 barrels daily nomination retroactive to May 1, H. A. Meyer, vice president of the company, testified that the additional amount was needed for refinery demands of subsidiary companies and would be immediately transported to Coffeyville, Kansas City, and East Chicago.

Samuel W. Hayes, representing firms who oppose the increased nomination, charged that all such increases or at least a major portion thereof would be for storage purposes while the price is low. Hayes was successful in having the case continued so that additional testimony could be produced. Commenting on the fact that Sinclair Prairie Oil Marketing Company failed by 151,000 barrels to take its April nomination Hayes stated, "This wide divergence between the amount they have been taking and the amount they are now asking appears suspicious. It calls for the fullest and most complete explanation. In my opinion this great increase is not to take care of current demands but to fill up storage. When crude oil is run to storage there are two kinds of waste—physical and economic. We all know this. The market demand does not determine the allowable in this instance. These cases mean the running of oil to storage and that is all they mean."

Chairman Paul Walker related that the commission had been approached by various producers asking that further restrictions be placed on production until the running of crude to storage can be stopped. "I hope this commission will not be made a part of such racket. So far as I am concerned it is not going to become a part. We cannot have them coming here now and asking for more oil to fill their storage and then when the tanks are full to have them come back demanding a decrease in allowables." Commissioners Walker and Hughes upheld Judge Hayes in a demand for data showing distribution of oil to the various Sinclair subsidiaries since the first of the year to show what amounts went to storage and what amounts were consumed at refineries.

Oklahoma City.—That concerted action may be taken to prevent storing of cheap oil was indicated during the week when Paul A. Walker, chairman of the Oklahoma Corporation Commission, announced receipt of a message from Governor Murray who told of receiving a telegram from Governor Alfred M. Landon of Kansas. Governor Landon pointed out that the economic situation in the oil industry will become worse if companies are allowed to store large amounts of oil at present prices and said that the Kansas Corporation Commission definitely has ruled that allowable production from the flush pools of the state will not be increased at the 25-cent posting. The Kansas governor who is an oil man of many years experience, urged gauging of storage in Kansas, Oklahoma and Texas at some time in the near future and regular intervals thereafter. Governor Murray said that he considered the Landon suggestion wise and that he might take the matter up with Governor Ferguson of Texas. Efforts during the past two years to ascertain storage conditions within the three states have met with failure.

Equipment Exposition *Ready for Monday Opening* in Houston Hall

Houston, Texas.—With the opening of this week the Oil Equipment and Engineering Exposition was scheduled to be launched in Houston at the hall in which the national Democratic convention was held in 1928. Beginning on Monday, May 22, the oil show is to last through Sunday, May 28.

The big building in which the exposition is being staged was a scene of much activity throughout the latter portion of the past week, with trucks moving in heavy and light equipment and machinery and exhibitors arranging their displays. Aside from the many exhibits which will be shown in booths in the building there will also be various outside displays, including a modern steel derrick and rotary drilling rig.

Virtually all available space in the large building had been placed in the hands of exhibitors late last week, assuring an exposition as large and successful as it will be interesting and educational.

Presenting new developments in equipment and in operating methods in all branches of the petroleum industry, the "show" will be primarily instructive in nature. The exhibits are calculated to prove of both value and interest to persons engaged in the drilling and production, natural gasoline manufacture, pipe line, refining and marketing divisions of the oil industry.

Not only standard tools and machinery, but also all kinds of specialties, will be exhibited, and manufacturers in all sections of the country will be represented.

Displays of equipment and machinery used in oil field drilling operations will include complete rigs, other surface tools and machinery, drilling bits, core barrels, tool joints, casing, fishing tools, and other equipment employed beneath the surface.

A 122-foot standard steel derrick has been erected in front of the Convention hall, which, incidentally, is located in the down-town section of the city, and in the derrick will be shown a complete rotary equipment installation. The derrick is the display of the J. A. Werme Steel Company of Oklahoma City. The derrick will be lighted from bottom to top at night.

Production equipment displays will include complete pumping units with both gas engine and electric motor drive, pumping jacks, well pumps, tubing, rods, tanks. New devices for effecting economical lifting costs will also be shown.

The displays of refinery and natural gasoline manufacture equipment will range from heavy compressors and cooling towers to the most delicate instruments.

Exhibits calculated to arouse the interest of persons interested in the marketing branch of the industry will include modern, highly efficient dispensing equipment, with not only late type gasoline pumps shown but also advanced devices and equipment for lubricating and greasing automobiles.

For the attention of spectators connected with or interested in the pipe line branch of the petroleum industry, whether from the standpoint of construction, maintenance, or reconditioning, there will be various displays. There will be demonstrated the latest welding methods in pipe line building, and pipe cleaning machines and protective coatings will be shown.

Transportation equipment of all kinds used in the various branches of the oil industry will be included in the displays.

Aside from the displays which have been described, the exposition will also be featured by important technical meetings, scheduled to be held in conjunction with the show. Among the various societies and associations connected with the petroleum industry which will hold such meetings is the Independent Petroleum Association of America.

In addition to the equipment displays of the various manufacturers there will also be technical exhibits of petroleum engineering departments of several universities in Texas and other states. Schools which will be thus represented include Rice Institute, the University of Texas, and the Texas Agricultural & Mechanical College.

Three prizes will be awarded for the most attractive and well arranged exhibits at the exposition, judged by their value to the visitors. The awards will be made by three business men who are in no way connected with the oil business, and the management of the show will accept the decision of the judges as final. The prizes will consist of three silver cups.

Reduced railroad rates have been provided for those attending the oil show and meetings to be held in connection with it during the week of May 22 to 28. Tickets must be stamped by the agent before boarding the train and validated by E. G. Lenzner, general manager of the exposition, in order to secure the reduced fare.

Pan American Airways, Limited, has given the oil show publicity in South American cities and will provide through service from those points to its northern terminals at Miami and Brownsville, connecting with air or rail transportation at those places for Houston.

Entertainment will be provided continuously at the convention hall during the hours the exposition is open through

Prizes to be awarded three most attractive exhibits at the Oil Engineering and Equipment Exposition.

E. G. LENZNER

courtesy of radio station KTRH, which has installed an amplification system in the building for the purpose. Announcements regarding the exposition will also be broadcast by that station so that complete information on the events can be ascertained by visitors at all times.

The staging of the oil show in Houston is in accord with the present day concentration of exploration work in the Gulf Coast area and adjacent sections of Texas; and those attending the exposition will have the opportunity of thoroughly studying equipment and methods employed in those areas.

Complimentary tickets have been provided by the management of the exposition for persons connected with every branch of the oil industry or with petroleum engineering departments of universities, and spectators are thus given the opportunity of visiting the show as frequently as they may desire and of making thorough inspections of all equipment and displays in which they are interested without the expense of paying admission fees. Such tickets may be secured either from the management of the exposition direct or from the exhibitors. The official hotel for the exposition is the Rice.

One of the features of the exposition will be a talk by Ernest L. Tutt, Coordinator of the Gulf Southwest District Offices, Bureau of Foreign and Domestic Commerce, Department of Commerce. Mr. Tutt is taking for his subject "Petroleum and its Products, Oil Equipment and Foreign Trade."

In his talk Mr. Tutt stresses the importance of foreign trade to the United States as a whole and of particular importance is noted the fact that the exports of the United States even at the low ebb of 1932 furnished employment to 3,250,000 people, excluding clerical and other similar workers engaged in handling transportation and paper work of foreign trade. It is particularly interesting to note that foreign trade is much more important to the Gulf Southwest and to Texas than it is to other parts of the country, and of great significance is the fact that under world conditions wherein there was a lack of gold and a consequent setting-up of trade barriers the raw materials from the Southwest and Texas flowed through considerably less obstructed channels than the manufactured products of other parts of the country.

In 1932 Texas was the leading export state and the value of exports declined only eight per cent from the 1931 level. During this same time New York, who is usually the leading export state and whose exports are composed very largely of manufactured commodities, dropped its lead to Texas and showed a decrease of 42 per cent from its 1931 level.

The following officers and directors of the exposition were named at a recent meeting:

E. G. Lenzner, general manager; Wallace Davis, advertising manager.

Directors: Bob Abercrombie, J. S. Abercrombie Company; S. R. Bowen, S. R. Bowen Company, Huntington Beach, California; Lyle Cashin, Gulf Production Company; Frank Dalton, D. & M. Machine Works, Torrance, California; R. G. Hamaker, Reed Roller Bit Company; F. A. Hopper, Hopper Machine Works, Bakersfield, California; Charles Lane, Oil Equipment Sales Company; Jon Long, Petroleum Equipment Company, Fort Worth; Ed. Lorehn, Cameron Iron Works; Earl W. Miller, American Iron & Machine Works, Oklahoma City; H. W. Millmine, Texas Rubber & Specialty Company; R. A. Mueller, Gray Tool Company; C. E. Olsen, Gearench Manufacturing Company; A. J. Pennick, Oil Center Tool Company; Harry Potts, Kerotest Manufacturing Company, Pittsburgh; Geo. L. Ratcliffe, Baroid Sales Company, Los Angeles; W. D. Shaffer, Shaffer Tool Works, Brea, California; Nowery J. Smith, Nowery J. Smith Company; E. I. Thompson, Norvell-Wilder Supply Company, Beaumont; John Worthington, American Hammered Piston Ring Company, Baltimore, Maryland.

Big Lake Tenth Anniversary Celebration at San Angelo

San Angelo, Texas.—Tenth anniversary of the discovery of oil and gas production in the Big Lake field, first important strike in the West Texas district, is to be celebrated here May 27 and 28 with an elaborate program of entertainment for oil men and their families. The San Angelo Board of City Development is sponsoring the affair, and a blanket invitation has been extended to all persons connected with the petroleum industry in West Texas for the present as well as in the past.

Entertainment will consist of golf tournaments, barbecue, dances, aquatic sports and a boxing match. W. D. Holcombe, who served as mayor of San Angelo during the height of the city's spectacular growth as a sequel to the opening of the Big Lake field by the Texon Oil & Land Company's wildcat on University of Texas lands May 28, 1923, is in charge of the two-day program. San Angelo has been host to the oil men frequently in the past, and has a reputation of being the most hospitable city in the oil regions of the Southwest.

Receiver Named for Wirt Franklin Companies

Oklahoma City.—W. N. Stokes, of the legal firm Stokes and Jarman, was named Monday, May 15, receiver for Wirt Franklin Petroleum Corporation, the Cromwell-Franklin Oil Company, and the personal interests of Wirt Franklin. Stokes, who is now general counsel for T. B. Slick interests, Anderson-Prichard Oil Corporation, and Ramsey Petroleum Corporation, was appointed receiver of the Franklin companies by District Judge R. P. Hill at the request of a group of stockholders headed by J. I. Cromwell.

It was claimed that a comptroller, John S. Alchorn, had been made a virtual dictator of the Franklin properties by a small group of creditors who allegedly have seized control of the board of directors. The plaintiffs assert that the salary of Edward Gault, vice president and secretary of Wirt Franklin Petroleum Corporation, recently was increased from $9000 to $18,000, against the wishes of other officers and stockholders.

Assets of the companies involved are claimed to be far in excess of liabilities.

Washington, D. C., May 18.—Collections from the federal gasoline tax in April, covering sales in March, reached their seasonal low at a total of $7,982,100 compared with $10,547,165 the preceding month, but receipts from lubricating oils showed only a small loss, amounting to $1,246,950 against $1,370,720, according to figures just compiled by the Internal Revenue Bureau.

MEN IN THE INDUSTRY'S NEWS

JOHN HANCOCK

Executive Vice President, Texas Pacific Coal and Oil Company

John Hancock, general counsel for Texas Pacific Coal and Oil Company with headquarters at Fort Worth, Texas, has been elected executive vice president and chief officer by the board of directors, to serve during the absence of Edgar J. Marston, president, who has been in bad health for a number of months. Marston is recuperating at Colorado Springs, Colorado, but does not expect to resume active management of the company for some time.

Hancock is a native of Newton County, Texas, and received his law schooling at the University of Texas. He has been with Texas Pacific Coal and Oil Company since 1919, shortly after he had tried (and lost) a case against the company, his court performance so impressing the then general counsel that he employed him as his assistant. Since 1921 he has been general counsel and a director of the company.

JOHN HANCOCK

GEORGE W. SCHNEIDER, president of the Shreveport Geological Society, and division geologist at Shreveport, for The Texas Company, was married May 15 at Tulsa, Oklahoma, to Miss Katherine Watson, daughter of Mr. and Mrs. Frank Watson.

W. B. PYRON, vice president of Western Gulf Oil Company in California, has been spending some time in Texas.

J. E. EATON, consulting geologist of Los Angeles, has been doing special work near Santa Barbara.

K. R. KINGSBURY, head of Standard Oil Company of California, has been attending to business in New York City and other Eastern cities.

G. E. HUBBARD, Dallas, operating in the East Texas oil field as G. E. Hubbard & Son, Inc., was called to Louisville, Kentucky, by the sudden death of his wife, who was stricken suddenly May 7 while on a visit. Burial was made at Dallas May 9. Survivors includes a son, Ray E. Hubbard, and a daughter, Mrs. Hazel Moran, both of Dallas.

S. R. ARCHER, H. S. Gennessey and M. B. Thompson, all of the United States Geological Survey, are making a survey in northwestern New Mexico in the Shiprock territory, east of the Mancos Creek and west of the Hogback, north of the San Juan river and south of the Colorado state line. Jim Carrier of Farmington is assisting.

WALTER D. CLINE, veteran oil operator and also an outstanding civic leader of Wichita Falls, Texas, was elected president of the West Texas Chamber of Commerce at annual convention held at Big Spring May 13. This organization is expected to give aid to constructive legislation on oil and gas matters during Cline's regime, as it is an influential body on state matters.

JAMES E. McKANNA, 34, president of McKanna, Inc., and an active operator in the North Texas district for a number of years, died May 14 at Wichita Falls following a heart attack. He was one of the organizers of Tower-McKanna Oil Corporation, which was instrumental in the discovery of several important oil pools in the district. Survivers include a widow, one daughter; and his parents, Dr. and Mrs. J. J. McKanna of Oklahoma City. Interment was made in the latter city May 15.

COM. A. A. BAKER, inspector of naval petroleum and oil shale reserves in Utah, Colorado and Wyoming, with offices in Casper, has returned to his home from Fitzsimons hospital where he was receiving treatment for injuries received in an automobile accident.

GEORGE O. MOODY, vice president in charge of production for Mid-Continent Petroleum Corporation, has been elected to the board of directors. Mr. Moody formerly was a director in Cosden Oil & Gas Company and Cosden Pipe Line Company.

W. L. CONNELLY of Tulsa, general manager Sinclair Prairie Oil Company, visited in Casper, Wyoming, for a short time recently while en route home from California. In Casper he was met by O. E. Daugherty, superintendent of production in Oklahoma for the company, Gregg Sawyer of Independence, Kansas, production superintendent in the Mid-Continent for Producers & Refiners Corporation, and C. H. Rutherford, of Bairoil, Wyoming, the Wyoming superintendent for the Sinclair Prairie interests. The group made an inspection trip of the Salt Creek field.

HARRY C. NEWMAN, General Metallizing Company of Tulsa, has been transferred effective May 22 to the General Metallizing Company of Texas and will have offices at 406 LaBranch Street, Houston. Mr. Newman formerly was with Foster Wheeler Corporation, having spent several years in Roumania and Russia.

C. H. CARPENTER, production superintendent in the Drumright district for The Texas Company, was in charge of the program for the Drumright Chapter, American Petroleum Institute, Monday evening, May 15. The subject for discussion was "Paraffin Treating Problems."

HAROLD M. SMITH, research chemist for the United States Bureau of Mines at the Petroleum Experiment Station, Bartlesville, addressed the American Chemical Society at Joplin, Missouri, outlining work being conducted at the station.

FRANK CHAMPION, general sales manager of the oil tools division, Byron Jackson Company, is on a general inspection tour which will include fields of the Mid-Continent, Gulf Coast and eastern oil areas before his return to Los Angeles.

R. A. "PINKY" REED, veteran Oklahoma driller, has returned to Elk County, Kansas, after a short visit in Tulsa. Mr. Reed operates a stripper lease in that district.

Tom Terry Is Chief of National Oil Scouts

San Antonio, Texas.—Thomas H. Terry of Seguin, Texas, scout for The Texas Company, was elected president of National Oil Scouts Association of America in the tenth annual convention in session here May 15 and 16. Mr. Terry, who has been actively scouting the Gulf Coast country from Tampico, Mexico, to the Mississippi River, for a number of years, was a candidate for the same office last year, despite his protest. This year the insistence of his brother scouts was not to be denied. Apparently he will be able to carry forward the constructive work which the association has fostered during the past two years.

Other officers elected to serve for the coming year include Claude Strahan, At-

TOM TERRY

BREWSTER
WIRE LINE
CORE
BARREL

If you want to know how to save from three to six hours on every core you take, visit Booth 340 at the Houston Show and let us tell you about the Brewster Wire Line Core Barrel. If you can't make the show, by all means write NOW for literature!

This new Brewster Barrel takes a core at any depth in from forty to sixty minutes. Absolutely no occasion to pull your drill stem until you dull the bit . . . and think how this will cut your drilling wire line costs as well as the wear and tear on the whole equipment. No temptation to pass up a likely formation, because coring is quick and easy with the new Brewster.

Prompt service available anywhere in the Gulf Coast or Mid-Continent . . . write . . . wire . . . 'phone.

The
BREWSTER
COMPANY
INCORPORATED
Shreveport, La. Phone 3181

BRANCHES:

LONGVIEW, TEXAS
313 E. Cotton St.,
Phone 781

HOUSTON, TEXAS
2000 Harrington St.,
Phone C-6811

LAKE CHARLES, LA.
Broad & Shattuck
Phone 256

EXPORT OFFICE
Acme Well Supply Co.,
136 Liberty St.,
New York City

CLAUDE STRAHAN

JESS L. BULLARD

H. L. CARPENTER

lantic Oil Producing Company, Shreveport, Louisiana, first vice president; H. T. Carpenter, Mid-Kansas Oil & Gas Company, Sisterville, Texas, second vice president; Jess L. Bullard, Shell Petroleum Company, San Antonio, chairman of the executive committee and editor-in-chief of the annual year book of the association; and C. O. Falk, Humble Oil & Refining Company, San Antonio, secretary and treasurer.

Retiring officers of the association were given a vote of thanks for administration of what was considered the most successful year of the organization since its formation. They were: Lloyd McGee, Humble Oil & Refining Company, Houston; G. C. Francisco, Jr., chairman of the executive committee; Claude Strahan, first vice president; Jess L. Bullard, second vice president, and J. W. (Red) Selby, secretary and treasurer.

Jess Hamilton, veteran oil scout with Sun Oil Company at Dallas, Texas, was voted a lifetime, honorary membership in the association. He was unable to attend the convention, being confined at home with illness. This probably is the first annual gathering Mr. Hamilton has missed.

Scouts Make Trip Through Tobin Aerial Survey Plant

San Antonio.—Edgar Tobin Aerial Surveys conducted a tour through the plant for scouts attending the tenth annual convention of National Oil Scouts of America in convention here May 15 and 16, explaining the process of aerial mapping and application of aerial photographs in the study of surface geology.

"Best Is Yet to Come," Says Edgar B. Davis

San Antonio, Texas.—"We are in this oil business for a long time, and the best is yet to come."

Thus spoke Edgar B. Davis, president of United North & South Development Company and discoverer of Luling and Buckeye fields in Texas, in an address delivered before the tenth annual convention of the National Oil Scouts Association of America in session here May 15 and 16.

Mr. Davis, whose subject was "Interdependence of Rubber and Oil Industries," was in general cheerful in his outlook for the oil industry but declared in effect that much more of the golden rule would have to be incorporated in operating policies if a more healthy condition were brought about.

C. O. FALK

Reduced salaries to employes as well as reduction in operating personnel and the attendant loss of jobs were scored by Mr. Davis as more or less natural results of insufficient idealism and altruism in business.

"We put in jail," he said, "the man who knifes you in the back. And yet we allow to go Scot free the firm which knifes you in competition and makes necessary salary reductions, reduced overhead and the resultant unpleasantnesses."

Mr. Davis decried the small amount of American capital invested in the rubber industry sources of supply, and, contending an unavoidable interdependence of the oil and rubber industries, inferred something like an amalgamation of the two might be highly beneficial to both.

Ray L. Dudley, publisher of THE OIL WEEKLY, spoke on the world petroleum outlook, pointing out that the United States' percentage of world recovery of crude oil had been decreasing each year since 1926, but that the position of American producing companies in foreign countries was increasingly strong.

A delineation by Mr. Dudley of causes of the rapid decrease in our export market was followed by a prediction of continued decreases to be in proportion roughly to increases in foreign output.

Calamities which might result from complete loss of export oil trade were inferentially minimized by the Houston

publisher who pointed out the increasing importance and magnitude of American companies in world petroleum markets, i.e., in foreign crude product manufacturies and retail outlets.

Colonel Charles S. Diehl, who scouted and reported the historically famous "Custer's Last Stand" battle, who later formed the famous Illinois regiment for participation in the Spanish-American war—and lived through it to found one of the San Antonio daily newspapers, gave the address of welcome.

Next Scouts' Year Book May Include California

San Antonio.—Plans for incorporating full information on California oil fields and wildcat prospects in the next edition of the year book of the National Oil Scouts of America were discussed in convention here May 15 and 16.

Arrangements were completed during the convention for obtaining a substantial portion of the data to be added to the book, publication of which will be supervised by Jess L. Bullard, Shell Petroleum Corporation, San Antonio.

Indications from advance orders filed during the convention are that the demand for the 1932 book, just off the press, will be even greater than the demand for the 1931 book, both of which are considered among the most authentic works available on the Gulf Coast and other parts of Texas and Louisiana.

Salt Water Dampens Two Saxet Field Prospects

San Antonio, Texas.—Salt water played havoc with a couple of Saxet field, Nueces County, wells in the 4800-foot sand. A. F. Holliday's F. J. Smith 2, Block 35, H. B. Shepard survey, showed 22 thribbles of oil and 25 pounds pressure in three minutes from 4850-69 feet on a drill stem test, but made salt water when drilled in. Tubing is being pulled.

Sinclair Prairie Oil Company's T. H. Isensee 1, Section 404, deepest well in this sand, 4878-99 feet, tested 1900 pounds pressure, considerable salt water and a little oil when attempt was made to complete it.

One good producer, however, seems to be in the making in Houston Oil Company's E. McGregor 1, being deepened from 4260 feet. The sand was topped at 4852 feet and cored to 4869 feet. A drill stem test showed for a producer, and casing has been set.

T-I-W Products

on display at the

Oil Equipment and Engineering Exposition

BOOTHS 404 and 406

You are cordially invited to inspect our products, not only at the exposition, but at our plant at the address shown below.

FULL HOLE FISH TAIL BITS
CHRISTIAN FISH TAIL BITS
DETACHABLE BLADE FISH TAIL BITS
DETACHABLE JAGGER BITS
CASING HEADS
LINER PULLERS
SET SHOE COMBINATIONS
LINER PACKERS
LINER PACKER SETTING TOOLS
TRIPLE SEAL BACK PRESSURE VALVES
TUBING SLIPS AND SPIDERS
ROTARY SLIPS AND ADAPTORS
LINER TYPE ROTARY SLIPS
DRILL STEM SAFETY VALVES
FLOW BACK VALVES
TUBING DRAINS
STANDING VALVES
WRIST PINS

TEXAS IRON WORKS, INC.

•

TEXAS IRON WORKS SALES CORPORATION

1401-1423 MAURY ST. HOUSTON, TEXAS

Middle Dome Test Making 1000 Barrels Light Oil

Coalinga, Calif. — After flowing steadily for more than three weeks, Standard Oil Company's No. 6-29V, Middle Dome producer, has established a potential of 1000 barrels of 56.5 gravity oil and around 27,000,000 cubic feet of gas. The effective depth is 7835 feet, but the well was drilled to 8406 feet.

Completion of No. 6-29V also proved that a water shutoff is possible on the Middle Dome. This well was completed under almost every difficulty, and a flow of 1000 barrels, showing a cut of one-tenth of one per cent was at least as good as was expected.

The well was drilled under pressure a large part of the way below 5000 feet, and the high pressure water zones probably will cause most trouble in the development of the Middle Dome. The water strata dissipated the mud rapidly, and pump action was affected by the flow. Use of special pressure equipment kept the water back, and allowed free circulation. The pressure maintained was equivalent to the formation pressure, plus enough pressure to force a small amount of mud into the troublesome strat. The small mud loss to the formation allowed clean circulation of the returning mud.

The Middle Dome is much smaller than the North Dome, and may not cover more than 1500 acres. Its reserve has been placed at 75,000 barrels, but more drilling will be required to establish a more satisfactory recoverable figure.

Weed Patch Definitely Proven for Production

Bakersfield, Calif.—Completion of a 3000-barrel well in the Mountain View (Weed Patch) district was the outstanding development of the week in the San Joaquin Valley. The discovery well, Dana Hogan's Wharton 1, has definitely proved the field, and further emphasized the possibilities of the bed of the valley. In producing 35 gravity oil, the new well exceeded expectations, as the original semi-completion produced a much lower gravity crude. Wharton 1 was drilled to 5890 feet and plugged back to 5862 feet. With a gas flow of about 3,000,000 cubic feet, the new well surprised companies that had avoided the district because of the low gas volume. The gasoline content was above 2½ gallons per thousand cubic feet.

The Mountain View field was the first new field of the year in California. Shell Oil Company completed Porter-Day 1 in 1930, but lost the well after deepening it and plugging back for the original producing zone above 6000 feet. This test was not recognized as the discovery well, however.

The bed of the valley assumed a more important position with the completion of Wharton 1. Prior to drilling at Union Avenue and Fruitvale, leading operating companies had avoided exploring the valley fill, except along the east fringe. Fruitvale proved that accumulations might be found several miles from the older formations along the east side.

The light gravity oil to be produced at Mountain View will affect the crude oil market more than would the discovery of another heavy oil field. The gasoline content of the oil will run high on a cracking basis, and the crude will command a better price than the heavy oil produced in other fields.

Completion on North Dome At New and Deeper Depth

Coalinga, Calif.—Superior Oil Company will complete Huffman 6, northwest flank test on the North Dome at Kettleman Hills, at 9137 feet, after cementing 9⅝-inch casing at 7168 feet and drilling through what is probably a record thickness of Temblor formation. This well is being completed about 600 feet deeper than the deepest of four wells previously finished on the 160-acre lease. A successful completion at this level will establish a depth record for the North Dome. At least two edge wells have been drilled to greater depths, but only one was completed as an oil well, and then through plugging back several hundred feet.

Interest in deeper producing formations at Kettleman Hills has increased with developments outside the proven limits of the Temblor. The Eocene should prove productive on the North Dome, but the identity of the formation has not been definitely established on top of the structure.

First completions were drilled to around 7000 feet, but excess gas and the extremely light oil called for deeper drilling. Gravity of the oil was reduced from 60 degrees to about 36 degrees by shutting off the upper part of the Temblor formation. Some geologists contend that the original producing zone was above the Temblor, but differentiation has been difficult.

Completion depths have increased steadily, and average edge wells are completed around 8800 feet. Inside producers are also being completed much deeper than those of three years ago. Utilization of the shallower gas zone will depend upon the demand for gas in the Los Angeles and San Francisco districts.

Despite the great depth of average completions on the North Dome, surprisingly few fishing jobs have developed. Not more than one well has been lost to mechanical difficulties. This is a very good record, in view of the awe with which operators viewed the field in the beginning. Stronger equipment, super-heated steam and improved drilling practices should be credited with the success in the field.

Record Well Production Opens Other Possibilities

Coalinga, Calif.—Discovery of oil in the Eocene at 10,915 feet in North Kettleman Oil & Gas Company's Lillis-Welsh 1, record wildcat two miles northwest of the North Dome at Kettleman Hills, has been regarded as one of the most important developments of the past several years, and may mean a much deeper production in several fields now producing in and above the Temblor zone of the Miocene. North Dome and South Dome are among these fields, and a large reserve of light oil may be found below the present producing levels. About 10 feet of solid oil sand was cored, but the well will be deepened to around 11,500 feet before another production test is made. As much producing zone as possible will be opened. The possibility that the present oil zone may be thinner than expected must be accepted, but the usual chances must be taken.

Lillis-Welsh 1 was allowed to flow a few minutes, but it was difficult to determine the nature of the flow until the drill pipe was pulled and 40 gravity oil recovered. The oil sand is very tight, but the pressure has been very high.

In preparing to drill to a still greater depth, value of the Eocene will be determined in finished form. This formation has produced oil at Coalinga, an old field located about 15 miles from the record well.

Failure of the well to develop production in the Temblor has been completely tempered by the present discovery. The North Dome was hardly expected to extend so far to the northwest, and only slight showings in the Temblor confirmed the belief for a time. The Eocene was believed to be a better possibility, as this formation has

Consider Electric Power

▲ ▲ ▲ ▲ ▲ ▲ ▲

Oil Company Executives are invited to consider the dependability and availability of electric power for the oil industry. For pumping, drilling, refining —electric power from interconnected power systems is dependable, reliable and cheap.

Consult your nearest power company when you are considering power for your next project.

▲ ▲ ▲ ▲ ▲ ▲ ▲

PETROLEUM ELECTRIC POWER CLUB

The Petroleum Electric Power Club is an outgrowth of a desire on the part of electric power companies to render greater service, through co-operative effort, to the Petroleum Industry.

been found over greater areas than has some of the shallower producing zones.

Weight of the drilling fluid in Lillis-Welsh will be increased to at least 100 pounds, as the 90-pound fluid was barely sufficient to hold the well under control. The hydrostatic pressure at 11,000 feet with the heavier fluid probably will exceed 7500 pounds per square inch.

California Completions May Call for New Work

Los Angeles.—Completions during the week in California showed a greater variety than usual, and the nature of new wells was such that additional drilling may result from producers finished in wildcat districts or from extension tests which call for offsets. The wide distribution of completions shows a lack of intensive development in any field.

Company, Well and Location	Init. Prod. Bbls.	Depth
Kettleman Hills—		
Kettleman North Dome Association, No. 87-30J	8000	8919
Long Beach—		
S. D. Coates, Britsch 1	500	5101
J. E. O'Donnell, Walker 2	400	5200
Wood-Callahan Oil Co., No. 11	400	5175
Mt. Poso—		
General Pet. Corp., Heisen 10, 16-27-28	400	1785
The Texas Co., Glide 3, 15-27-28	300	1754
Playa del Rey—		
Union Oil Co., Vidor 3	175	6100
San Luis Obispo County—		
Shell Oil Co., Mahoney 1, 4-25-12	*	5972
Weed Patch—		
Dana Hogan, Wharton 1, 32-30-29	2000	5862
Wilmington—		
Wilmington Terminal Oil Co., No. 1	100	3640

*Failures; †Junked; ¶Million cu. ft. gas.

California Permits Show Decrease from Last Year

Los Angeles.—Six wells were started during the week in California districts, bringing the total for the year to 97, as compared with 134 at the same time last year. Long Beach was the only field showing more than one new well. The distribution of new wells follows:

Peoples Oil & Gas Company's No. 1, Section 31-3-12, in Los Angeles County.

Van Cleave Oil Company's No. 1, Section 24-4-13, and No. 2, Section 24-4-13, at Long Beach.

Caroline G. Spaulding's Blue Goose 93-7, Section 16-4-29, at Elwood.

James Kassik's No. 1, Section 27-14-5, in Colusa County.

Kettleman North Dome Association's No. 56, Section 8-22-18, on the North Dome at Kettleman Hills.

New Field, Extension Week's Record in California

Los Angeles. — Completion of one wildcat to prove a new field, and promise of a two-mile extension to another field featured California operations during the past week. Interest in wildcatting in the San Joaquin Valley has increased, and leasing operations in the area show both major and small companies in transactions. More liberal drilling requirements are being demanded by operating companies, and royalties are usually lower than those of five years ago.

At Belridge, in Kern County, Casa Mira Oil Company's Theta 1A, Section 29-28-20, is drilling in brown shale at 2138 feet.

At Bena, Caravel Petroleum Corporation's Tejon 1, Section 19-30-30, is drilling in sandy shale at 765 feet.

In the Devil's Den area, Lincoln Drilling Company's Core Hole 1, Section 10-25-18, is showing gas at 1175 feet. Pyramid Hills Oil Company's Gauthier 1, Section 24-25-18, is drilling in shale at 3662 feet.

Near Lost Hills, Associated Oil Company's Williamson 1, Section 2-26-20, is drilling in a hard shale at 3575 feet.

In the McKittrick district, General Petroleum Corporation's Lovitt 1, Section 10-30-21, is rigging rotary. Hub Oil Corporation's Purman 1, Section 22-29-21, is drilling in brown shale at 5415 feet.

At Weed Patch, Dana Hogan's Wharton 1, Section 32-30-29, is flowing 2000 barrels of 28 gravity oil from above plug at 5862 feet. Mohawk Petroleum Company's Hood 1, Section 30-30-29, is making production test at 5660 feet, after bringing well under control.

Santa Barbara County

Off Coal Oil Point, Doyle Petroleum Corporation's Campbell 1, an ocean test, will make a production test at 4082 feet after cementing nine-inch casing at 4063 feet and coring the Vaqueros zone.

Near Goleta, Standard Oil Company's Chase-Bryce 1, Section 20-4-28, is building rig.

Ventura County

At Conejo, American Oil Company's Powell 1, Section 33-2-20, is pumping water and small amount of oil from 2645 feet.

In Hopper Canyon, Commander Oil Company's Fennel 1, is cleaning out at 2454 feet preparatory to locating water.

At Ojai, Midlands Oil Company's Canet 1, is deepening from 6132 feet after swabbing dry.

Near Rincon, Woodrow Petroleum Corporation's Woodrow 1, Section 4-3-24, has landed 5¾-inch liner on bottom at 7292 feet and will make production test.

In San Miguelito extensions, Chanslor-Canfield Midway Oil Company's Hobson A-3, Section 23-3-24, is drilling in brown shale at 2865 feet. Continental Oil Company's Grubb 2, Section 23-3-24, is drilling in sandy shale at 5075 feet. Honolulu Consolidated Oil Corporation's Valenzuela 1, Section 23-3-24, is coring hard shale and sand at 6250 feet.

At Santa Paula, J. W. Mosher's No. 1, Section 22-4-21, is reaming at 1110 feet and will drill deeper.

In the Sespe district, H. A. Ivar's Star 7, Section 1-4-20, is reaming to bottom at 1865 feet. Merchants Petroleum Company's Cochran 6, Section 1-4-20, is drilling in hard sand and shale at 900 feet.

At Simi, C. L. Anderson's Marr 12, Section 36-3-18, is drilling in hard shale at 1115 feet.

On Sulphur Mountain, Wilshire Oil Company's Thompson 1, Section 20-4-21, is standing recemented with 8⅝-inch casing at 1706 feet; total depth 1843 feet.

In Timber Canyon, Petro Well Producing Company's No. 4, Section 18-4-20, is drilling in sandy shale at 4075 feet.

Miscellaneous

In Butte County, Buttes Oilfields' No. 2, Section 36-16-1, is a rig.

In Fresno County, Bergman Oil Company's Loma 1, Section 12-12-11, is waiting on casing at 4032 feet; production test will be made. Emerich Oil Company's Mason 1, Section 35-13-13, is drilling in shale at 2175 feet. Graham-Loftus Oil Corporation's Oliver 1, Section 20-15-18, is drilling in shale at 5500 feet. Dana Hogan's Ladd 1, Section 28-20-16, is awaiting rig and equipment. North Kettleman Oil & Gas Company's Lillis-Welsh 1, Section 24-21-16, flowed oil on short test at 10,927 feet, and will be deepened.

In King's County, McGee & Stone's No. 2, Section 33-24-22, is rigged up. Kettleman City Oil & Gas Company's

No. 1, Section 10-23-19, is drilling in shale at 1215 feet.

In Tulare County, Dil-Harp Oil Company's No. 1, Section 25-24-26, was plugged to 1100 feet for a test with formation tester.

Southern California

Near Chatsworth, Marble Investment Company's Deer Lake 1, Section 6-2-16, showed some gas and water on shutoff test at 1960 feet.

At El Monte, Andrus & Hutcheson's No. 1, Section 11-1-11, is drilling in hard shale at 1700 feet.

At Lynwood, W. L. Jones' Jones 1, Section 31-2-12, is cleaning out at 4890 feet.

At Newhall, Hudson Petroleum Company's Alexander 1, Section 1-3-16, is drilling in hard shale at 1500 feet.

North of Long Beach, Peoples Oil & Gas Company's No. 1, Section 31-2-12, is rigging rotary for a deep test near Hynes.

At Palms, Palm Ridge Oil Company's Palms 1, Section 2-2-15, is drilling in hard shale at 4965 feet.

At Saugus, Willetts Oil Company's Walker 1, Section 35-5-16, is cleaning out at 1900 feet for deepening into gas zone which caused blowout.

At Wilmington, Pacific Oil Investment Company's Lupie 1, Section 28-4-13, is being tested on the pump at 3618 feet; may make commercial producer.

At Irvine, Aiken & Bailey's Irvine 1, Section 3-6-7, is rigging rotary.

In the Salton Sea district, Spindletop Oil Syndicate's Salton 1, Section 25-7-10, is drilling in gray sand at 2765 feet.

In San Bernardino County, Great American Petroleum Company's Gapco 1, Section 18-2-8, is drilling in hard shale at 1900 feet.

Elwood Decline Will Mean Deeper Development There

Santa Barbara, Calif.—The rapid decline of the Elwood field will eventually lead to both further development of the Vaqueros zone and the deeper Sespe zone. The former has been the only producing zone developed. The Sespe zone was proved productive about two years ago by Barnsdall Oil Company, but overproduction caused abandonment of further drilling. The discovery well was shut in after flowing at a 3000-barrel rate from only a few feet of open hole. It is not believed that the Sespe zone will be as productive as the Vaqueros, but it may be even more productive.

Nearly half of the Elwood field lies outside the mean high tide line, and the latter part of development has been more expensive than the mainland activities. Some of the best completions were drilled in the ocean, on tideland permits issued by the State of California.

Elwood has been a very profitable producer. The producing zone is shallow, and the sand very porous. Large initial productions have been established with the aid of compressors. The first wells were completed with flows of around 3500 feet under natural conditions, but later a few wells were completed with initial flows of better than 10,000 barrels. The field has declined rapidly, due partially to the desire to get most of the oil quickly.

A new location has been made on Permit No. 93 by Caroline Spalding. Other wells may be started at ocean locations.

Several New Operations in Huntington Beach Field

Huntington Beach, Calif. — Several new locations have been made in the Huntington Beach field, and drilling in the townlot sector near the ocean is expected to determine whether the two good producers recently completed were freak wells. Macroo Oil Company's Smith 1, completed two weeks ago, has been flowing almost 4000 barrels of oil from 4450 feet, after starting out at a 2000-barrel rate. The potential will be fixed at about 3800 barrels daily. This well has been the subject of much speculation, and is the largest well completed in the field for years. It is located near the ocean, and is apparently influenced by the undeveloped tideland strip. This means that it may be possible to complete good wells along the tracts near the state highway, and several operators are expected to deepen old wells or drill from the surface.

The Huntington Beach field has declined steadily for years, and completion of a large well is a distinct novelty. The townlot area has not been a very good paying district, and many small wells are being operated at a loss. It may be possible to drill a strip near the ocean and increase production on several leases.

Belridge Completion Makes 4000 Barrels

Bakersfield, Calif. — Belridge Oil Company has completed No. 63-27, in the Belridge field, with an initial production of 4000 barrels of 41 gravity oil and 8,000,000 cubic feet of gas. The well was drilled to 5402 feet and completed in the Temblor formation. The depth was about the same as that at which the discovery well was completed, and no attempt was made to reach the deeper Eocene. The oil showed no cut, and production increased for some time after the production test began.

The North Belridge field is regarded as one of the best reserves in the San Joaquin valley. Original production came from the shallow zone, and only a heavy oil was produced. The discovery well in the Temblor was completed below 5000 feet, and opened this formation to drilling. The field is a narrow producing area, but the inside leases show no water and yield a very light oil.

Discovery of Eocene production around 8000 feet was an important development last year. An edge well was later completed in the Eocene by Ohio Oil Company, and the deepest producing formation was found to underlie a much greater area than the shallow or Temblor zone. The field has extensive reserves, but will be drilled conservatively.

Ocean Wildcat Off Coal Oil Point Ready to Test

Santa Barbara, Calif.—Doyle Petroleum Corporation will make a production test in Campbell 191-1, an ocean wildcat off Coal Oil Point, at 4082 feet, after drilling 20 feet into the Vaqueros and cementing a string of nine-inch casing at 4063 feet. A water shutoff test will be made before drilling further into the sand. This well was running considerably higher on structure than the original well, which was abandoned, but a faulted condition accounted for finding the Vaqueros at about the same depth. Cores from the Vaqueros looked especially promising, and commercial production is possible.

The Coal Oil Point structure was largely mapped by J. E. Eaton, and the first well flowed 38 gravity oil and water from 4150 feet. A water shutoff was never obtained, and mechanical difficulties led to plugging back to around 500 feet for redrilling. The Vaqueros was found in the redrilled hole at about the same level as in the first hole. Water from the poor shutoff in the first hole probably affected the production test in the redrilled hole.

Long Beach, Calif.—Eight new wells will be started at Long Beach, and of this total six new locations have actually been made. Two or three strong independent operators have decided to drill wells from the surface for completion around 5000 feet. The cost of drilling is much less than during the intensive deepening campaign of four years ago. Plugging back or deepening of old wells will continue.

Two Central Oklahoma Wildcat Tests Interesting

Tulsa.—Although definite structural comparisons are not available, two exceedingly interesting central Oklahoma wildcat tests have reached important depths and are being watched closely. Both tests are running high enough to indicate definitely that they are on the Nemaha or Granite Ridge axis. Neither has reached the pre-Pennsylvanian unconformity but the intervals compare favorably with other wildcat tests along the axis and both are potential threats for new production. The area has been highly thought of for several years and has been pointed to as Oklahoma's next chance for big production. The tests are: Gypsy Oil Company et al's McConnell 1, CNE SE Section 28-17n-4w, drilling below 3500 feet; and Shell Petroleum Corporation et al's Faulkner 1, CSE NW Section 11-15n-4w.

In Kay County, Blauner et al's Maple 1, NE NW SE Section 20-27n-4e, was repairing rig at 660 feet.

Continental Oil Company's Thompson 1, in Garfield County, NW SW SW Section 7-24n-4w, was drilling in lime at 5796 feet.

In Pawnee County, O. M. Mainess' Schildberg 1, NW SW NW Section 27-22n-6e, was underreaming 10-inch to 1500 feet.

Reports from Noble County were as follows: Shell Petroleum et al's Whitten 1, CSE SE Section 7-20n-2w, had its best pay at 5208 to 5211 feet, total depth, and flowed 1552 barrels in 3½ hours; Sinclair Prairie Oil Company's Jerome 1, SWC Section 15-20n-2w, total depth 5204 feet, trying to shut off water at 5201 feet with six-inch; Stanolind Continental's Bolay 1, CSW NW Section 16-20n-2w, had drill pipe frozen, total depth is 4668 feet; Shell et al's E. Farr 1, CNE NE Section 19-20n-2w, drilling in sand at 5024 feet with a hole full of oil. Shell Petroleum Corporation's M. Farr 1, CNE SE Section 19-20n-2w, had top of Oread at 3050 feet, Tonkawa lime at 3735 and was drilling below 3954 feet; Champlin Refining Company's Graves 1, SW NW NE Section 21-20s-2w, set 15½-inch at 170 feet and was waiting on cement to set.

In Payne County, Kemp-Nunnelee's Crane 1, SW SE SW Section 10-17n-6e, set 15-inch at 480 feet and was waiting on cement.

In Okfuskee County National Investor's Billy 1-A, SE NW NW Section 29-12n-9e, was drilling below 3033 feet.

Reports on Seminole County tests were as follows: Carter Oil Company's Community-Canard 1, CS½ SW SE Section 35-11n-6e, had Hunton lime at 4090 feet, cored from 4091 to 4095 feet in lime, getting a show of oil and gas; cored from 4155 to 4172 feet in lime, also for a show of oil and gas, had Sylvan at 4223 feet, Viola at 4309 feet and was drilling below 4320 feet. Spears Drilling Company's Hart 1, NW NE SW Section 18-8n-7e, was drilling below 840 feet. English et al's Harjo 1, NE SW Section 3-8n-8e, abandoned at 676 feet after losing casing at that depth the latter part of February. Felmlee et al's Bowlegs 1, SE NE SW Section 1-7n-7e, was shut down at 440 feet. Armstrong et al's Diamond 1, NE SE SW Section 8-6n-7e, was waiting on cement to set at 64 feet.

In Beckham County, Pattee Royalty Company's Goose Tree 1, SW SE SW SE Section 32-10n-23w, was drilling below 2200 feet.

In Caddo County, Denver Producing & Refining Company's Noe 1, NW SW SW Section 34-10n-10w, was drilling below 8395 feet. Abernathy-Brown's Houston 2, SW NE SE SE Section 8-6n-13w, which was shut down at 1115 feet in January of 1931 was abandoned at 1121 feet, having had sand at 1040 to 1045 with a show of gas, lime at 1055 to 1070 feet with a show of oil. W. L. Miller's Gardner 1-A, SE SW Section 26-6n-10w, had broken sand at 2240 to 2260 feet and a show of oil at 2342 to 2352 feet and was drilling below 2365 feet in shale.

Two tests in Haskell County, which have been shut down since early in 1931 were abandoned: Ault et al's Hall 1, CNW SW SE Section 14-9n-19e, total depth 2000 feet, with no sands recorded; and Ault Hall 1, SE NW Section 25-9n-19e, 200 feet.

In Pittsburg County, Moffett and Hall's Jones 1, CNE NW Section 14-8n-14e, was drilling below 1460 feet.

In Kiowa County, McWhirter et al's Vanderneck 1, NE NE NW Section 3-7n-19w, was shut down at 2035 feet. Christian's James 1, NE SE Section 8-7n-18w, was running five-inch casing.

In Pottawatomie County, Hershall-Payne's Lovelace 1, CSW SW NW Section 27-6n-4e, had Hunton at 3375 feet, Sylvan at 3504 feet, Viola at 3617 feet, total depth 3623 feet, set six-inch to 3620 feet, waiting on cement.

In Hughes County, Dixie Lee Oil Company's Taylor 1, CE½ NW NW Section 32-5n-10e, was waiting on cement to set. Nash Redwine's Badger 1-A, CW½ SW SW Section 4-5n-11e, was drilling below 260 feet. Pioneer Petroleum Company et al's Brock 1, SE C Section 26-5n-11e, had rig up.

Reports from Pontotoc County tests were as follows: Blackwell Oil & Gas Company's Abbott 1, NW SW NE Section 14-4n-6e, pulled pipe and plugged back to 1220 feet, cleaned out to 1034 and completed for 3,000,000 feet of gas with 375 pounds rock pressure. Gilbert et al's Starritt 1, NW NW SE Section 28-4n-6e, was drilling below 750 feet. Williams et al's Kroth 1, NE NE SE Section 33-3n-4e, underreamed six-inch to 1717 feet and was shut down. Edna Marie Oil Company's McWhirt 1, NE SE Section 11-2n-6e, drilling at 788 feet in lime with a little water. W. E. McCraw's Mayhue 1, NE C Section 19-2n-6e, drilling below 465 feet. Brydia et al's Thomas 1, SW NE Section 20-2n-7e, a location. Sledge et al's Wooley 1, SWC Section 22-2n-7e, rig. H. L. Wirrick's Fee 1, SE SW Section 29-2n-7e, drilling below 988 feet. Choctaw Oil & Gas Company's Thompson 1, SW NE SW Section 1-1n-7e, drilling below 675 feet.

In Coal County, Fink & Russell's Miller 1-A, SE SE NE Section 10-2n-8e, was drilling below 2830 feet. Dodd & Burton's Grigsby 1-A, NW SE NE Section 35-1n-8e, cleaning out at 1867 feet.

In Stephens County, Doyle Oil Company's Cunningham 1, SE NE NW Section 4-1n-6w, was drilling below 1915 feet. Navajo et al's Martin 1, SE SW NW Section 18-1n-5w, had show of oil in sand at 630-700 feet, drilling below 1750 feet.

In Murray County, A. E. Heiden's Saddler 1, NE C Section 19-1n-2e, had rig up.

Southern Oklahoma

In Marshal County, Abbott et al's Simmons 1-A, NE SE NE NE Section 14-6s-6e, was drilling below 802 feet. Thompson et al's Null 1-A, NE SW NW Section 24-5s-5e, was shut down at 703 feet in shale. Thomas et al's Setliff 1, SW SE SE SW Section 36-5s-6e, shut down 1110 feet.

J. D. Wakefield et al's Kelly 1, in Jefferson County, NW NW SE Section 1-5s-8w, was shut down at 550 feet. Hobbs et al, Burnett 1, NE SE SW NE Section 32-5s-5w, had top of lime at 1912 feet and was drilling below 2003 feet in lime.

In Carter County, P. Turner's Dove 1-A, NE NW SE Section 3-5s-1e, was

a location. In the same county, Clowe et al's Morgan 1, CNE NW SW Section 4-1s-3w, was shut in after gauging 8,000,000 feet of gas at 2039 feet.

In Tillman County, Emenhiser et al's Pace 1, CSW Section 3-4s-17w, was drilling below 2832 feet.

Nemaha Ridge Play in Oklahoma Is Expanded

Tulsa.—The Nemaha Ridge play of Central Oklahoma was further expanded during the week when Roxy Lantz et al announced location for Price 1, CNE SW Section 19-14n-3w, approximately five miles west and slightly north of the Edmond in northwestern Oklahoma County. It is also two and one-half miles northwest of Mid-Kansas Oil and Gas Company's Messer 1, SW SW SW Section 32-14n-3w, completed in September, 1930, at a total depth of 4771 feet, 66 feet in the Wilcox sand. Owners of the well produced about 20,000 barrels of oil during completion and within a short time thereafter. It has been shut in for approximately 2½ years.

First reports of the week follow:

Two new locations were announced in Carter County: Clem Scott Oil Company's Carter 1, SW NW NW Section 13-1s-3w, and Ed. Shell's Acres 1, SE NE SE Section 15-2s-2w.

There were three first reports in Creek County, J. E. Crosbie's Escoe 5, 60 feet NW CNE SW Section 26-18n-8e, drilling below 225 feet; Akin et al's Wilson 1, NE SE NE Section 34-18n-8e, rigging up machine; Dixie Drilling Company's Walker 4, NW SW SW Section 21-18n-9e, an old well cleaning out to drill deeper from 2615 feet.

In Grady County, W. S. Critchlow was moving in tools on his Adair 5, SW SW NW Section 27-3n-5w.

In Hughes County, Mainard's Moore 3, CWL NW NE Section 22-7n-8e, was a location.

Jefferson County had two first reports: Farlyn Oil Company was drilling below 750 feet on its O. W. Seay 9, NW SW SE Section 3-7s-5w. Harvey Stone had machine on his Pennisten 1, SE NW SE Section 17-7s-5w.

In Okfuskee County, correction is made on Burke-Greis et al's Montgomery 2, 130 feet N CSE NE Section 20-10n-9e, spudding, formerly reported 200 feet N CNE SE.

Two new tests were announced in Oklahoma County, both wildcats, Mid-Continental's Edwards 1, CSE SE Section 19-11n-1e, cellar, and Roxy Lantz et al's Price 1, CNE SW Section 19-14n-3w, location.

In Okmulgee County, Berry et al were rigging up their Adams 5, NWC SW Section 28-15n-14e, to drill deeper from 1710 feet.

In Osage County, Sinclair Prairie Oil Company was drilling below 100 feet on their No. 1, SWC NW Section 22-25n-6e.

In Payne County, Deep Rock Oil Corporation was building rig to deepen their C. J. Harris 1, SE C NW Section 9-18n-5e from 2660 feet.

Three first reports and one correction were listed for Pottawatomie County as follows: Magnolia Petroleum No. 1 West, SE C NE Section 26-6n-4e, rig; Mid-Continent Petroleum Corporation No. 2 Shrader, NWC NE Section 6-6n-5e, (twin) rigging up; Wellman's No. 1-A Weldfeldt, SE NE NE Section 3-7n-4e, an old well deepened from 3834 feet to 3865 feet for 30 barrels of oil, first report. Correction: Brown et al's Brandenburg 1, SW NW SW Section 35-8n-4e, drilling below 1850 feet, was formerly reported Sunbeam Oil No. 1 Brandenburg.

Wagoner County had four first reports: Godfrey's Norfer 2, CEL SE SE Section 14-18n-15e, machine; Musketeer's Grayson 1, NW SE SE Section 22-18n-15e, machine; Holderman's Taylor 1, CSL NW NE Section 24-18n-15e, machine; Stansberry's Drew 4, NE Section 26-18n-15e.

Oklahoma Completions Continue to Increase

Tulsa.—For the second consecutive week completions in Oklahoma showed a nice increase and results were pleasing when 33 reports revealed 20 new oil wells, three gas wells, 10 dry holes and two abandoned locations. Leading the completions was Shell Petroleum Corporation's Whitton 1, CSE SE Section 7-20n-2w, which made 1552 barrels in three and one-half hours and was shut in rated at better than 10,000 barrels daily. Detailed reports were as follows:

Company, Well and Location	Init. Prod. Bbls.	Depth
Beckham County—		
Westoak Gasoline, Markham 1, cnw sw 22-9n-23w	*	
Westoak Gasoline, Bugle 1, ne ne nw 28-9n-23w	*	
Carter County—		
E. M. Boring, Riddle 1, ne nw sw 4-1s-3w	¶8	2038
Daphine Oil, Major 3, sw ne se 25-1s-3w	2600	2631
Samedan, Gorman 2, ne se nw 25-1s-3w	700	2517
Creek County—		
Sherry-Murta et al, Thompson 1-A, sw sw ne 36-17n-11e	30	2639
Gilpin et al, Riley 1, nw ne nw 33-17n-12e	65	2005
Sinclair Prairie, Rector 35, csl sw sw 5-18n-7e, (owdd) (twin)	35	2533
Galbreath Byers et al, W. D. Allen (Noble) 1-A, nwc 35-18n-8e	*	1320
Doak & Hughes, J. Boyd 2, cel se ne 30-19n-9e	15	2413
Jefferson County—		
Farlyn Oil Co., Seay 1, nw sw se 3-7s-5w	150	1255
Logan County—		
Shell Petroleum, Storey 1, se c sw 30-19n-4w (owdd)	1273	6153
Noble County—		
Shell Petroleum, Whitten 1, cse se 7-20n-2w	10,642	5211
Okmulgee County—		
Penrod, Inc., Alexander 1-A, se nw ne 14-13n-13e	*	1870
English & Henderson, Jefferson 1, se sw nw 36-15n-14e	*	1723
Osage County—		
Silurian Oil, No. 36, sw ne ne 18-23n-12e	¶4/5	1734
Lewis Production No. 1, swc nw 27-24n-7e	55	2613
Bay Oil Corp., No. 1, ne c nw 36-24n-7e	25	2929
Indian Territory Illuminating Oil & Iron Mountain, No. 1, nwc sw 19-24n-8e	*	750
Sinclair Prairie Oil, No. 1, sw nw sw 22-25n-6e	75	2474
Pontotoc County—		
Blackwell O&G, Abbott 1, nw sw ne 14-4n-6e	¶3	1034
Legon et al, Bruner 1, se ne se 29-5n-5e	125	2512
Pottawatomie County—		
Amerada, Sherley 1, ne c se 26-6n-4e	780	3402
Seminole County—		
Wood, Ashby 1, sw ne nw 22-7n-5e	125	3004
Sinclair Prairie, House 4, ne nw se 2-7n-6e (owdd)	10	4297
English & Tourtelotte, Harjo 1, ne c sw 3-8n-8e	*	660
Tulsa County—		
H. W. Bowder, Hodge 1, ne sw ne 5-17n-14e	*	1560
Helscel, Rosella Fee 1-A, sw se ne 1-18n-12e	15	1486
Wagoner County—		
B. G. Goble, Murphy 2, nw ne ne 1-17n-15e	*	1130
Detrick, Sarty 1-A, ne c se 21-17n-16e	30	1051
Dunbar, Roberts 1, ne nw sw 14-18n-15e	*	1550
R. Godfrey, Norfer 1, se se se 14-18n-15e	*	972
R. Dillard, Luckey 1, se ne sw 15-18n-15e	*	1041
J. E. Martin, Drew 4, ne nw se 26-18n-15e	5	1088
Stansberry, Drew 3, sw se ne 26-18n-15e	50	1082

Kansas Field Results Continue Sub-Normal

Wichita, Kansas. — Completions in Kansas continued at a sub-normal rate during the week when reports showed three new oil wells with a total initial production of 609½ barrels, one gas well with an initial volume of 30,000,000 cubic feet, three dry holes, and one abandoned location. Proposed play in the Hilligos area was given a set back when Charles Hilligos et al announced abandonment of their location at Isern 2.

The following completions came from five counties:

Company, Well and Location	Init. Prod. Bbls.	Depth
Barton County—		
Noble Drilling Co. et al, Grant 1, csw sw 4-20s-11w	7	3341
Hilligoss et al's Isern 2, ne sw ne 12-20s-11w	*	....
Douglas County—		
Hazlet et al, No. 1, csw sw 10-14s-19e	*	1275
Greenwood County—		
McGinnes, Carson 1, sw se nw 4-24s-11e	*	2010
Harvey County—		
Phillips Petroleum, Warkentine 3, swc 20-22s-3w	150	3509
Johnson-Darby, Shaw 2, swc 21-19s-1w	¶30	2952
Lario O&G, Lewis 2, nw sw nw 36-19s-2w	452	3392
Woodson County—		
Nye et al, Hanson 1, nwc ne 17-24s-14e	*	1750

*Failures; †Junked; ¶Million cu. ft. gas.

McPherson County Leads New Work in Kansas

Wichita, Kansas.—McPherson County led new work in Kansas during the week with six first reports out of a total of 13 for the state.

Greenwood County continued its pace with three starts, Woodson County had two and Chase and Reno, one each.

Detailed reports were as follows:

In Chase County, Polhamus was moving in machine on its No. 1, SE SW NW Section 25-22s-9e.

Three first reports were recorded for Greenwood County: Sheedy et al's Shambough 1, SWC NE Section 1-23s-9e, a rig; W. Swartz' Kulander 1, NWC NE Section 33-23s-13e, machine; Holden-Henderson's Lewis 2, CSW Section 25-27n-8e, drilling below 380 feet.

Of the six first reports in McPherson County, three were old wells deepening. Derby Oil Company announced the location of its Laquement 3, SWC SE Section 20-19s-1w. Rosenthal's Knudson 1, SWC SE Section 23-19s-2w, was deepening from its old total depth of 2964 feet, drilling below 3020 feet. Lario Oil & Gas Company was drilling below 2330 feet on its Grattan 4, NE SE SW Section 24-19s-2w, this being the first report on this well. Dickey Oil Company was rigging up its Williams 1, NE C NW Section 26-19s-2w, to deepen from 2960 feet. Hartman Oil Company was spudding on its West 1, NE SE SE Section 34-19s-3w. Palmer and others were rigging up their Winn 2, SW SE NW Section 7-20s-1w, to deepen from 2982 feet.

In Reno County, Hollow and Carter's Heidebrecht 1, SW SE NE Section 36-22s-4w, had rig timbers on ground.

In Woodson County, Young and others were drilling below 570 feet on their No. 1, in SWC NE Section 11-24s-13e; in the same county, Dwyer and others had machine up on their No. 1, NWC Section 9-24s-14e.

Two Kansas Wildcats Quit, Two Start During Week

Wichita, Kansas.—Although two new tests were reported from Kansas areas during the week the wildcat list was not expanded due to abandonment of two locations recently made in McPherson County. New wildcat tests are: E. Yarnell et al's Spear 1-A, SE NE NE Section 31-33s-6e, in the Dexter area of Cowley County; and, Sever & Hesman's Schrag 1, SW SW SE Section 22-19s-4w, 3½ miles west of the town of McPherson and slightly over a half-mile north of Ellis et al's Towney 1, SWc SE Section 27-19s-4w, one of the earliest tests in western Kansas and a dry hole completed at 2227 feet in 1905. Nearest production is in the Johnson pool in township 20 south, range 3 west. Only one other test, A. F. Terry et al's Wade 1, CSE Section 20-19s-4w, had been drilled in the township. It was a dry hole at 3917 feet.

In Sumner County, Deal Oil & Gas Company's Tompkins 1, SWc Section 26-33s-1e, had top of the chat at 3630 feet and a small show of oil and gas with a hole full of water at 3645 feet, now drilling below 3665 feet.

In Elk County, Austen and other's Wade 1, CNE NE Section 9-29s-12e, had top of Mississippi lime at 1658 feet with a show of gas and water and was drilling below 1680 feet.

In Pratt County, Ninnescah Oil & Gas Company's Hardesty 1, SW SE SE Section 28-27s-11w, was still underreaming five-inch to 4082 feet.

Reports on wildcats and semi-wildcats in Greenwood County were as follows: Kite et al's Butler 1, SW NE Section 15-26s-11e, machine; Reser & Chriswell's Boyer, CSW SW Section 28-26s-10e, was discovered to be the same as Wright 1, in CSW SW Section 28-25s-10e, spudded and shut down; Knight et al's Moser 1, NE SW SW Section 33-22s-12e, drilling below 1200 feet.

Carter Oil Company's Rowley 1, in Sedgwick County, CE¼ NE NE Section 30-25s-2e, was drilled to 3267 feet and was underreaming six-inch casing.

In Woodson County, Ward McGinnis' Ross 1, NW SE Section 32-25s-14e, was still a location.

In Reno County, Roth & Farrout's Yoder 1, (owdd) 30 feet north CNW NW Section 15-24s-5w, was shut down after repairing skidded rig.

The Stafford County test of Atlantic Oil Producing Company, Gates 1, NW SE Section 27-21s-13w, opened a new area when it filled 350 feet of oil in three hours at 3703 feet. The well had top of siliceous lime at 3679 feet, set five-inch liner at 3682 feet, had a small show of oil at 3682 to 3694 feet, 350 feet of oil in hole at 3694 to 3703 feet, and was drilling below 3704 feet with 1000 feet of oil in the hole.

Reports from McPherson County were: Gaume and Maxwell's Goering 1, NE SW SW Section 24-21s-3w, location abandoned; Investors Mineral Development Company's Kaufman 1, SE C Section 35-21s-3w, location abandoned; Eisehauer et al's Kaufman 1 NE SW SE Section 24-20s-3w, spudded and shut down; Roth & Farrout's Swanson 1, NE SW NE Section 13-19s-3w, set 12-inch at 1112 feet, 10-inch at 1400 feet and was drilling below 1410 feet; Darby Petroleum Company's Brucker 1, NE NW NE Section 24-19s-1w, had a show of oil, gas and water at 2904 feet, made one bailer of water at 2907, two bailers of water at 2912 feet and was underreaming eight-inch to 3060 feet.

In Barton County, Noble Drilling Company pumped 12 barrels of oil per day from Grant 1, CSW SW Section 4-20s-11w, after treating with 1500 gallons of acid, and will produce the well to hold leases. Ranken et al's Sooey 1, CSW NE Section 34-18s-12w, had a show of water at 2900 feet and was drilling below 2980 feet.

In Rice County, Vickers Petroleum Company et al were rigging up standard tools on Specht 1, SE NE Section 20-20s-10w; and Langston et al's Wells 1, NE SE Section 4-20s-9w, was shut down at 1750 feet.

Lario Oil & Gas Company's Fulton 1, SW SW NW Section 14-16s-2w, in Saline County, was shut down at 2900 feet.

In Graham County, Schleimeyer et al's Smith 1, SE C Section 24-8s-25w, was shut down at 4180 feet after a fishing job.

Archer and Young Strikes Open New Territory

Wichita Falls, Texas.—Two recent wildcat oil strikes in the shallow sand horizon in Archer and Young Counties opens the way for a revival of development work in North Texas when the crude price situation resumes a normal level. Both discovery wells give promise of making attractive pumpers.

White-Duncan and associates' G. R. Smith 1, located in north central Young County, Section 1365, is rated good for 50 to 75 barrels daily when equipped to pump from sand at 710-712 feet. It is located about midway between Olney and Jean, and several miles from nearest production.

The Archer County discovery by W. B. Omohundro et al's J. H. Turbeville 5-A climaxes an eight-well drilling program that had yielded two small pumpers in trying to locate the main pool in an area about eight miles due west of Archer City. Turbeville 5-A is south of the established production and cut off by a cordon of dry holes, and it swabbed 130 barrels of oil in 12 hours from sand at 1476-1497 feet. Gunsight lime was logged at 1425-28 feet. It is on the west line of Section 35, Harris sub-division of the Club Ranch. C. B. Bailey et al are starting an offset, and other drilling is in prospect.

The Texas Company's J. B. L. Hansard 1, wildcat in northwestern Clay County, has settled to 20 barrels daily on pump after plugging back from lime at 1605-1716 feet to oil sand at 1144-1148 feet. This well is situated more than a mile from nearest production, and has been in process of completion for a month after encountering water in the lime.

Lawson Oil & Gas Company, Tulsa, has made location for a wildcat test in northern Clay County on the Bertha Henderson 640-acre tract near center of block farmed out by Shell Petroleum Corporation. It is situated within a bend of the Red River, and in an area that is reputed to be supported by favorable geology ascertained by core drill and geophysical examinations.

Wheeler County Gasser May Be Deepened for Oil

Pampa, Texas.—An estimated flow of 19 million cubic feet of dry gas production developed by the semi-wildcat test of Helena Oil & Gas Company and Laurel Oil Company on the J. A. Ballew tract in western Wheeler County may be cased off to deepen for oil production. This outpost is making gas from lime section between 1867 and 2256 feet, with the hole bottomed at 2267 feet. It has a surface elevation of 2582 feet. It is located at center of NE¼ SW¼ Section 50, Block 24, H&GN Ry. survey, and about two miles northwest of small wildcat oil producer completed last year by Devore et al on the Sitter ranch.

Completions in the Panhandle district last week included a dry gasser in Wheeler County and small oil and gas wells in Gray County.

Detailed list of completions follow:

Company, Well and Location	Init. Prod. Bbls.	Depth
Gray County—		
Parton & Holt, J. S. Morse 4	¶5-8	2804
Wheeler County—		
Osborne et al, Sloss-Admire 2	¶1.8	2167
B. M. Rhoads & Elbar Corp., J. M. Noel 1	25	2482

*Failures; †Junked; ¶Million cu. ft. gas.

Low Crude Price Retards West Central Texas Work

Ranger, Texas.—Unable to procure a crude price commensurate with lifting costs, the operators in the West Central Texas district are diverting more attention to the development of natural gas production.

Completions in the district totaled 14, including four gassers rated at a combined flow of 2,750,000 cubic feet gas daily. During the same period there were only two oil wells completed, having a combined output of 13 barrels daily.

Treatment of old pumping wells in the lime belt with acid continues on a large scale in this district. This method of stimulating production is without an equal, and with a number of companies competing for well rejuvenating contracts the cost is now very nominal.

Completions for the West Central Texas district follow:

Company, Well and Location	Init. Prod. Bbls.	Depth
Callahan County—		
A. C. Gentry et al, A. R. Kelton 1	*	723
Hayek Oil Co., Finley 1, lease 10	¶¼	478
Henry House et al, Finley 5	¶½	429
Putman Oil Co., Wadsworth 9.	¶1	419
Sample et al, Finley 2, Sec. 13.	¶½	345
Spencer et al, R. D. Williams-Alvord 1	3	587
Coleman County—		
Green & Ice, Henderson 1	*	1714
E. V. Gwinnupp et al, Edmondson 1	*	1857
Eastland County—		
Clements & Urban, W. L. Boggs 1	*	1372
Hickok Prod. & Gasoline Co., Eppler 1	¶½-10	3510
Palo Pinto County—		
Brazos River Oil & Gas Co., J. H. Wester 5	*	2400
Shackleford County—		
Douglas et al, Mrs. Stevens 1	*	649
Tex-Central Oil Co., Reynolds 1	*	1092
Walker et al, Cox 4-A	*	650

*Failures; †Junked; ¶Million cu. ft. gas.

Six Oil Wells from 18 North Texas Completions

Wichita Falls, Texas.—The North Texas district yielded 18 completions during the past week, including six oil producers with a combined initial output of 199 barrels daily. The 12 failures were scattered among six counties.

Completions includes two wildcat producers in Clay and Young Counties by The Texas Company after a prolonged period of testing of these wells.

Detailed list of completions for North Texas district follows:

Company, Well and Location	Init. Prod. Bbls.	Depth
Archer County—		
W. H. Kerbow et al, Baker 1	*	1191
Kiske Oil Co., Lauster 3	*	1238
Rathke Oil Co., Gulf. Prod. Co., Fee 1	*	1112
Clay County—		
Developers O&G Co., Fee 18-A	*	1783
The Texas Co., J. B. L. Hansard 1	20	1716
Jack County—		
A. C. Parks et al, John Miller 1	*	701
Throckmorton County—		
A. V. Jones et al, W. B. Parrott 1	*	1387
Wichita County—		
G. W. Cooper et al, W. T. Waggoner 24	40	1336
Kimbell & Bostic, Hines 3-A-B	5	295
Hines 4-B	*	328
Morris & Dunn, Sheldon 8	*	900
Young County—		
Floyd Ard et al, Belknap 1-B	*	717
Bonner Oil Corp., Edwards 12.	4	500
J. C. Cory et al, Terrell 1	*	598
E. Ellis et al, Hill 1, Sec. 195.	5	1050
Panhandle Ref. Co., Morris 1, Sec. 252	*	649
The Texas Co., E. L. Barnes 1	125	5192
Wooten & Reed, Hinson 5	*	900

*Failures; †Junked; ¶Million cu. ft. gas.

Four Wells Completed In West Texas Fields

San Angelo, Texas. — The West Texas district contributed four oil producers and one failure during the past week. The oil wells accounted for a combined output of 605 barrels daily, with Howard and Ward Counties the largest contributors.

Detailed list of completions follows:

Company, Well and Location	Init. Prod. Bbls.	Depth
Crockett County—		
R. C. Chambers et al, A. C. Hoover 1	5	2105
Continental Oil Co., J. S. Todd (Sec. 25) 1-A	*	1693
Howard County—		
Mid-Continent Pet. Corp., L. C. Denman 2	280	2805
Pecos County—		
Black-Doran & McGee, Pecos Valley Oil Co. 2	50	1590
Ward County—		
G. R. Thomas et al, J. B. Bennett 2	270	2551

Company, Well and Location	Bbls.	Depth

Gulf-O'Brien Extension Try Abandoned as Failure

San Angelo, Texas.—Plugging orders have been issued by Atlantic Oil Producing Company for its test on University of Texas fee tract, located on the west side of the Gulf-O'Brien field, Ward County, and offsetting production, after encountering water in lime horizon at a depth of 2720 feet. This test began last December, but the rotary contractor junked the first hole at 2448 feet, and a twin location at 2438 feet.

A combination of acid treatment and nitro shots failed to develop commercial production from Continental Oil Company's J. S. Todd (Section 25) 1-A, located on the west side of the Todd-Massie ranch shallow pool, Crockett County. The hole has been plugged at a depth of 1693 feet.

Injunctions and Receivers Retard Proration Violators

Longview, Texas.—Most aggressive court injunction campaign ever staged by the state in the history of the East Texas field in trying to curb proration violators is now being conducted by members of the Texas Railroad Commission and Attorney General's department. More than 50 injunction suits have been filed against independent companies and operators since the prevailing order went into effect April 24, and a few repeaters on violators have been forced into receivership. A standing threat of receivership action has put fear into many operating units that have heretofore virtually ignored the commission since the exclusion of the military from the field.

Members of the commission and Attorney General Jas. V. Allred are convinced that the prevailing proration order will withstand the pending attacks in federal court beginning May 25 at Fort Worth, and are standing by their convictions by going after violators on a large scale.

The policy of throwing properties of violators who failed to abide by injunction orders into receivership now promises to become more prevalent, as it opens the way for a vast number of profitable jobs to be dished out at the discretion of the court and state employes prosecuting the charges. Operators are becoming aware of this risk, and are now less inclined to repeat after once being plastered with a district court restraining order. Offenses committed in Gregg County are being prosecuted before District Judge W. C. Hurst at Longview.

Allred Goes Home to Explain Proration; Abuse Associations

Wichita Falls, Texas.—Responsibility for the granting of the 800,000 barrel daily production allowable in effect since April 24 in the East Texas field was passed back to the Texas Railroad Commission by Attorney General James V. Allred, who spoke here before a large crowd and also over a tri-state radio hook-up on the night of May 17 in defense of his political activities. As a likely candidate for governor in the next election, Allred extended himself in answering charges preferred against him and members of the commission by speakers at a mass meeting held here May 10, and during the course of his address charged that a "pernicious lobby" has been conducted by major oil interests during the present session of the legislature at Austin.

Allred resided in Wichita Falls prior to his election to the office of attorney general about 2½ years ago.

Widely publicized speech of Col. E. O. Thompson, junior member of the railroad commission, at Dallas, May 9, placed the burden on the attorney general for the high allowable given the East Texas field under the terms of the current proration order. Speakers at the May 10 mass meeting of oil operators and civic leaders in North Texas at Wichita Falls severely criticized the commission and the attorney general for their part in giving the East Texas field an allowable that collapsed the crude price structure around 15,000-odd stripper wells in North Texas and all other fields in the Southwest. J. S. Bridwell, Wichita Falls producer, and president of the North Texas Oil & Gas Association, was the principal speaker at the first meeting here.

Allred stated in reply to questioning during the course of his address that the broadcasting of his remarks was made possible by Major J. R. Parten, president of Woodley Petroleum Company, Shreveport, Louisiana, and head of the Independent Petroleum Association of Texas. The latter organization sponsored the high production allowable in East Texas, and is working hand in glove with members of the commission and the attorney general's department in handling the East Texas situation.

Charges were made by Allred that Bridwell had announced prior to departing from Austin at the conclusion of the legislature fight to substitute the present commission with an appointive oil and gas board that he was going back to Wichita Falls and "destroy Jimmie Allred in his home town." Other remarks were personal attacks on Bridwell in regard to the slashing of employes wages, and his wealth.

A surprise feature of Allred defensive talk included information that was scheduled to have been aired out before the Legislature had the latter body carried out its plans to stage a public trial of Chas. F. Roeser, Fort Worth producer and president of the Texas Oil & Gas Conservation Association, for having engaged in a hotel lobby fight with Gordon Burns, a member of the Legislature, during the height of the ouster fight on the commission at Austin.

Since the fight trial failed to materialize through a general compromise on the part of various factions, including the dropping of the drive on the commission, Allred availed himself of the opportunity to air out the affairs of the association in his speech here. Activities of the association quoted by him were alleged to have been procured May 15 by placing E. H. Eddleman, executive vice president and former independent company official, under oath for examination before a justice of the peace at Austin. Allred waved the papers said to be a trans-

cript of the justice court hearing, and said that Eddleman fixed the income of the association for the past 14 months at about $100,000. Eddleman was credited by the speaker with having stated that about $90,000 of this sum had been contributed by eight major companies, including $40,000 by Humble Oil & Refining Company. The latter concern was stated to have 2200 members on the roster of the body, which claims a paid in membership of 5200 according to Allred. The speaker added that Magnolia Petroleum Company and Gulf Production Company had not contributed.

Denial was made by Allred from the speaker's stand that he had stated recently to the daily press that he would resist federal intervention in the oil proration situation in Texas, or that he was responsible for the commission having granted East Texas such a high allowable. He added that it was his responsibility to see that a legal order was written, and that apparently the present one is such, since it has not been enjoined in state or federal courts.

Test Northwest of Van Field to Drill Deeper

Tyler, Texas.—Nacatoch sand cored at 1191-1210 feet by Reasonover Brothers' D. F. Cade 1, located northwest of the Van field and several miles southwest of the recently established shallow oil pool, showed only fair saturation, and plans are to deepen the hole. The Orbit Oil Company et al's Moore 1, located northwest of the shallow pool, missed the shallow sand, but negotiations are underway to deepen to the Woodbine level.

Drill stem test was given The Texas Company's R. A. Tunnell 9, located on 100-acre lease on the southeast edge of the Van unit block, so as to determine if it had reached the water level in drilling to 2942 feet before going to the expense of cementing pipe. The well showed oil free of water with the tester tool at 2923 feet. Casing has since been cemented above the Woodbine series at 2919 feet.

Pure Oil Company's R. M. Butler 2, located on 89.16-acre lease, was completed flowing 18 barrels oil per hour via 11/16-inch choke from sand at 2967-98 feet. It was plugged back from 3010 feet.

Van field completion follows:

Company, Well and Location	Init. Prod. Bbls.	Depth
Pure Oil Co., R. M. Butler 2	800	2998

Init. Prod.

Upshur County Wildcat Makes 25-Barrel Pumping Well

Tyler, Texas.—Climaxing a five-test development program on a large block of wildcat acreage in the Jamestown area, southeastern Upshur County, a group of independents appear to have scored a 25-barrel pumper from the Woodbine sand series at a sub-sea depth of 3432 feet. Previous tests participated in by J. K. Wadley and associates proved dry, or were junked in trying to workover. The small producer was scored by Charlton Lyons, Shreveport, Taubel and others in drilling W. M. Shettlesworth 2, located in NWc 100-acre tract, Jas. M. Dunn survey, from sand at 3722-24 feet, with pipe cemented one foot above the top of the oil sand. Favorable oil showings made by the first group of tests drilled in this area, which is due north of the East Texas field, gave rise for belief that an important oil pool was in prospect, but the presence of water with the oil and abnormal sub-sea depth discouraged outsiders.

Wadley et al are credited with having spent a sizeable fortune within the past eight months in the area for leases and royalties, besides the cost of development work. This group has lately been buying mineral interests to the north of their dry hole on the H. W. Duffy tract, Thos. Starr survey, thence to the town of Ore City. Wadley et al are credited with having acquired lease on Sun Oil Company's J. Frank Smith 130-acres, located in the southeast part of the J. M. Dunn survey, carrying an immediate drilling obligation and an over-riding royalty.

The Edwards limestone logged at 3724-3821 feet by the Limestone County wildcat test near Thornton of V. V. Waite, C. H. Kadane and A. J. Riddle on the B. B. Barron 640-acre tract, E. Mabry survey, failed to carry any oil or gas saturation. Contract has been made to carry the hole to 4250 feet to try for production in the Glen Rose. If this deep zone proves dry the hole will be plugged back to try and complete as a gasser in the Woodbine sand series at 3049-3212 feet.

Four East Texas wildcats drilled to and below the Woodbine sand horizon are listed as completions, including a Rusk County project that has been dormant for six months.

In Cass County, T. H. Pardoe et al's S. A. Orr 1, on 316-acre tract, G. W. Morris survey, standing 2160 feet.

In Cherokee County, T. C. Cardwell et al's W. C. Wallace 1, (155 acres), C. Burnett survey, is preparing to test 2400 feet. E. F. Melton, Trustee's (was Saranac Oil Company) P. E. Jones 1, (132 acres), J. D. Hamilton survey, elevation 399 feet, drilling 3250 feet.

In Ellis County, Paris Oil Company's O. S. Bain 1-A, R. M. Williamson survey, is standing at 1040 feet.

The Franklin County test of White Oak Oil Company on the O. C. Clanton 82-acre tract, S. McCreary survey, logged Pecan chalk at 1423-1540 feet, with elevation of 378 feet, topped Austin chalk about 2402 feet and first Woodbine sand at 3377 feet, dry and abandoned 3778 feet.

In Freestone County, Sun Oil Company's Menyard White 1, (40 acres), J. M. Hallmark survey, elevation 438 feet, logged Pecan chalk at 2966-3205 feet, Austin chalk 3917-4298 feet, proved dry in Woodbine section, shut down 4690 feet.

In Hopkins County, Culbertson Brothers and Mike Lynch's Louis Stribling 1, (25 acres) Thos. Morris survey, materials. B. H. Ashby and Dillworth Hager's R. A. Logan 1, 175 (acres), A. O. Wetmore survey, location.

The Limestone County test of C. C. Curtis and J. E. Winans et al on the Emma Daniels 41½-acre tract, Pedro Varrello survey, standing 360 feet. Joiner & Miller's W. Stephenson 1, Geo. Gentry survey, drilling shale 3315 feet. V. V. Waite & Kadane's B. B. Barron 2, (640 acres), E. Mabry survey, logged Austin chalk at 2390-2805 feet, with elevation of 465 feet, topped Woodbine sand 3049 and rated at 5,000,000 cubic feet gas at 3212 feet, logged Edwards lime 3724-3821 feet, drilling shale 3860 feet.

In Morris County, Buchanan, Burkhalter et al's Staggers 1, J. D. Nelson survey, swabbed and worked over but no show oil, total depth 3679 feet. Tunnell, Stewart, Cole et al's (was Grover Hart) Walcott-Lott 1, D. A. Russell survey, standing 1896 feet.

Rusk County

In Rusk County, Jordan & Ramsey's L. W. Prior 1, (53 acres), Walker Pettit survey, is a rig. John Kegans et al's R. L. Needham 1-A, J. H. Chambers survey, elevation 356 feet, standing 1513 feet; Strong 1, John Hallan survey, derrick. Walker & Murray's Arnold 1, Levi Sparks survey, top Pecan chalk 2606 feet, fishing 2760 feet.

The Smith County test of R. L. Martin et al (Thayer & Mattocks) on the W. P. Rushing 50-acre tract, J. Herrin survey, logged Pecan chalk 3150-3563 feet, with

elevation of 413 feet, standing 3650 feet. Mundt & Mount's O. G. Funderburgh 1, (63 acres), V. Loupy survey, drilling 150 feet.

In Titus County, Roy Davis, Steve Rotunda et al's Pittsburgh State Bank 1, (40 acres), Jas. T. Box survey, logged Pecan chalk 2440-2960 feet, with elevation of 308 feet, dry and abandoned 3676 feet.

In Upshur County, Taubel and C. H. Lyons et al's W. M. Shettlesworth 2, (100 acres), J. M. Dunn survey, topped broken Pecan chalk 2360 feet, hard chalk 2459-2945 feet, with elevation 292 feet, Austin chalk 3567-3700 feet, topped Woodbine sand 3722 feet, estimated small oil pumper at 3724 feet.

In Van Zandt County, Cole et al's Gentry 1, cemented 10-inch casing 100 feet. C. A. Everts Drilling Company's J. J. Goode 1, (108 acres), D. Rose survey, drilling 1970 feet. Golf Oil Company's S. R. Stone 1, (93.2 acres), H. Myers survey, A-589, coring 1215 feet. A. J. Delcambre et al's A. Crim 1, (48 acres), standing 1110 feet. Manning & Carlin's Howell-Owens 1, (37 acres), Wm. M. Bunch survey, drilling 710 feet. John W. Naylor & Rowland's Moore Grocery Co.-Humble 1, Wm. Daniels survey, missed Nacatoch sand, shut down 1420 feet. Petroleum P. L. & Storage Company's S. S. McGee-Humble 2, (972 acres), Wm. Daniels survey, cemented surface pipe. Reasonover Brothers et al's D. F. Cade 1, (45.3 acres), testing sand 1191-1225 feet. Roy Stumpf et al's L. K. Riggs 1, (3 acres), Wm. Daniels survey, topped Pecan chalk 1855 feet, with elevation of 455 feet, abandoned 2950 feet.

In Woods County, Hull & W. B. Saulsbury's T. H. Peterson 1, (320 acres), W. B. McNutt survey, elevation 421 feet, drilling 3405 feet.

Sun Plugs Freestone County Wildcat in Woodbine Sand

Mexia, Texas.—Plugging orders were issued last week by Sun Oil Company on its Freestone County wildcat test near the town of Dew after testing dry in the Woodbine sand horizon at 4713-4768 feet. It was drilled in the southeast corner of the Menyard White 40-acre tract, J. M. Hallmark survey, and checked about normal with other failures in the general area.

East Texas Drilling Not Slowed by Crude Price

Tyler, Texas. — Nineteen additional flowing wells were added to the East Texas oil field last week, indicating that companies and individuals are content to carry on development work in the face of cheap crude prices and threatened dissipation of the flowing life of the field.

This latest group of completions included four wells that were the first to be drilled on their respective leases, ranging from one-fourth to 25 acres in area. Addition of new operators and drilling sites to production reports are made possible by continued splitting up of older producing leases, and through clearing up of litigation in some instances.

Detailed list of completions for the past week follows:

Company, Well and Location	Init. Prod. Bbls.	Depth
Joiner Area—		
B. G. Byers et al, Lula Jackson (25-ac) 1	7200	3766
Gulf Prod. Co., G. G. Turner (312-ac) 23	3500	3737
Humble O&R Co., J. J. Pitner (65-ac) 5	9300	3749
S. A. Plowman (228-ac) 22-A	7000	3678
Stanley Lewis et al, Fee (¼-ac) 1	6500	3753
Kilgore Area—		
Canica Oil Co., M. Jackson 1	10,500	3658
Delta Drl. Co., R. A. Motley (282-ac) 16	6500	3737
Gulf Prod. Co., C. E. Christian (277.65-ac) 17-C	6000	3690
R. H. Still (189-ac) 10	5000	3551
Humble O&R Co., S. S. Laird (230-ac) 17-A	9500	3686
Invincible Oil Co., Weiss (66-ac) 8	9000	3557
Sun Oil Co.-Texas Seaboard Oil Co., M. T. Cole (264-ac) 23	9600	3549
Longview Area—		
Barnsdall Oil Co.-Sun Oil Co., L. Bingham (101-ac) 10	8500	3561
Gulf Prod. Co., J. C. Judge (518-ac) 36	8000	3549
Ed. Holman et al, Victor 1	7200	3650
Magnolia Pet. Co., L. J. Everett (171.1-ac) 16	11,000	3693
Irene Zeigler (83-ac) 7	8000	3470
Yount-Lee Oil Co., J. C. McKinley 8-B	9200	3591
E. M. Whatley (39-ac) 2-B	7000	3529
Wildcats		
Franklin County—		
White Oak Oil Co., O. C. Clanton 1	*	3778
Titus County—		
Roy Davis, Steve Rotunda et al, State Bank of Pittsburgh 1	*	3676
Van Zandt County—		
G. C. Grasty & Roy Stumpf, L. K. Riggs (6-ac) 1	*	2950
Rusk County—		
T. E. Castle et al, R. H. Gary 1	*	3812

*Failures; †Junked; ¶Million cu. ft. gas.

Pumping Derrick Stocks In East Texas Depleted

Tyler, Texas.—All available stocks of stub steel derricks for pumping wells have been wiped out in the East Texas oil field as result of many companies taking steps to place wells on the pump. Supply companies were not prepared to meet the demand, and will have to retard delivery until the equipment can be fabricated.

Supply companies report a flood of inquiries emanating from major and independent producing units for price quotations and possible delivery schedules on pumping equipment. Actual booking of orders within the past 10 days have not been in proportion to solicitations. Manufacturers are stressing the importance for prospective equipment purchasers to anticipate their requirements and place orders in advance, else there is danger of a waiting list being formed.

Adequate warning has been broadcast for some weeks by representatives of manufacturers as to the danger of a serious shortage of equipment should a flood of buying orders be issued on short notice. East Texas producers have been rather erratic in their preference on types of equipment, so manufacturers are reluctant to fill their stock bins and yards with finished pumping unit parts until the wishes of the buyers are more clearly understood.

Hopeful of lessening the danger of an equipment shortage some of the manufacturers and distributors are offering to accept contracts from reliable producing concerns for pumping units and withhold collection invoices for six months from date of order.

In view of these persuasive buying measures resorted to by pump concerns the responsibility for a prolonged period of idleness of non-flowing wells will rest entirely with the well owners should the present excessive production spree kill as many wells as anticipated.

Vigilance Committee After Proration Violators

Longview, Texas.—Proration violators in the north portion of the East Texas field, centering on Gregg and Upshur Counties, are to be singled out and turned over to enforcement departments of the state for prosecution by an organized vigilance committee, according to W. R. Nicholson, Longview banker and property owner in the field, who has been designated chairman. The vigilantes are to be composed of land and royalty owners, who must work voluntarily in collecting evidence that will be submitted

under oath to the proper authorities for the launching of prosecution proceedings.

Nicholson is a civic leader and firm believer in law enforcement and respect. He has attained a reputation with oil men through having personally engaged the services of about 10 men to work in collecting evidence to be used in trapping gasoline tax evaders in his community. His first act as chairman of the vigilance committee was to call for a minimum of 100 volunteer workers to cover the upper section of the field on day and night shifts as a means of aiding state enforcement officers known to be short handed. The body has hired an office force to accept reports at its headquarters on the fourth floor of the First National Bank building, Longview.

Bombing Resumed With Firing of Gulf Well

Kilgore, Texas.—The bombing brigade resumed activity in the East Texas field on the night of May 17 and used Gulf Production Company's C. E. Christian 4, M. McCabe survey, northern Rusk County, for a target. The explosion released the flow of oil and gas, and the well caught fire. The services of an expert fire fighting crew were engaged to kill the well by the injection of water under heavy pressure via the tubing.

"Unofficial" East Texas Output Around Million Barrels

Kilgore, Texas.—Production in the East Texas field continued to hover at the million barrel daily average mark during the past week, or about equal to the transportation and storage facilities and requirements of the local refineries.

Due to an increase in the total number of wells in the field to 10,056 the allowable as determined by the railroad commission's proration order that has been in force since April 24 amounts to about 813,000 barrels daily.

Major companies are directly and indirectly absorbing the bulk of this low priced crude, and without exception are stocking up with intention of realizing on a price advance when the commission and attorney general see fit to lower the allowable.

However, the prevailing proration plan and allowable is frozen, as pointed out in these columns last week, until after a test case on the validity of an order is made before a three-judge federal court at Fort Worth May 25.

Doubt prevails as to whether the state authorities will act in lowering the field's allowable upon the conclusion of the trial, or wait until the court makes known its decision on the matter.

A surprisingly great number of affected oil operators and companies, and especially those in other areas outside of the East Texas field, are elated over the rapid dissipation of flowing energy now taking place in the troublesome area. Such a radical stand is predicated on the fact that East Texas may cease being a chronic market breaker when sufficient number of wells are handicapped with lifting costs.

East Texas Allowable Overtaxes Gathering Lines

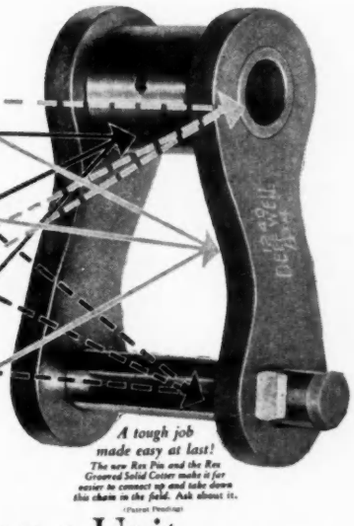
Kilgore, Texas.—About 40 miles of four-inch pipe lines are being hurriedly constructed in the East Texas field by Humble Pipe Line Company in order to relieve the excessive pressure carried on its gathering system as result of the

ANNOUNCING *the* NEW REX DEEPWELL CHAIN

New STRENGTH *Life*
Alloy Steel Sidebars
Alloy Steel Pins
Seamless Alloy Bushings
Seamless Alloy Rollers

New TOUGHNESS with Hardness *Wear*
Heat-Treated Sidebars
Hardened & Toughened Pins
Heat-Treated Rollers
Case-Hardened Bushings

New PRECISION *Safety*
Ground Pins
Ground Bushings
Finished Rollers
Sidebars—Die Cut — No Sharp Notches


A tough job made easy at last!
The new Rex Pin and the Rex Grooved Solid Center make it far easier to connect up and take down this chain in the field. Ask about it.

THE UNIT LINK

Again COMBINED into the Unit Link—that stays a Unit . . . .

DEEPWELL CHABELCO — THE GREATEST CHAIN THAT EVER HIT THE OIL FIELDS

Stocked in all active Oil Fields
1030 D.W. 3 = A.P.I. 3 1240 D.W. 4 = A.P.I. 4

Made by CHAIN BELT COMPANY
1639 West Bruce Street Milwaukee, Wisconsin

REX *Deep Well* CHABELCO

field's allowable continuing well above 800,000 barrels daily.

All other major pipe line units in the field are experiencing difficulty with congested gathering and trunk lines due to their eagerness to absorb as great a volume of the oil as possible, and to take care of all well connections. Many operators have been forced to install field pumping units in order to buck high pressures on gathering lines.

Texas Intangible Law Faces Veto on Constitutionality

Austin, Texas.—The Texas legislature seems determined to enact an intangible assets tax on pipe lines operating in the state.

Last Tuesday the report became current that Governor Ferguson would veto the Daniel oil tax bill which includes such a clause.

The House then amended the Tennyson common carrier pipe line bill, H. B. 733, to include a clause placing an intangible assets tax on both oil and gas pipe lines.

At the same time members of the House were circulating a petition urging Ferguson to sign the Daniel bill, and threatening to pass the measure over the veto.

It was reported that Governor Ferguson intended to turn down the bill because of the unconstitutionality of the clause affecting pipe line taxation, which would probably mean a long fight in the courts and a consequent delay in the collection of taxes.

Request for Postponement Of Conroe Hearing Denied

Austin, Texas. — Lawrence Lipper, Houston attorney who May 19 requested the Texas Railroad Commission to postpone the special hearing on Conroe field scheduled in Houston May 23, was denied that request, according to a statement issued Friday by Commissioner Lon A. Smith.

Mr. Smith explained that advocates of the potential basis of proration have advanced the argument that it would make an excellent basis for prorating all Texas wells by the same yardstick. He pointed out that East Texas is allowed six tenths of one per cent of its potential, and that other fields readily could be placed on the same allowance, and that this would permit the commission to divide a state allowable on a fair basis among all fields.

Commissioner Thompson offered no criticism of this argument and inferred the proposition seemed reasonable.

Texas Permits May Point To Drop in Flush Crude

Austin, Texas.—If the issuance of drilling permits may be taken as an indicator, the condition of the Texas oil industry depending upon decreased contribution of flush oil should be better the latter part of the year than it has been for the past 12 months.

Granting of 61 permits to drill last week brought the state's total up to 2086 wells thus far this year. This compares with 3031 permits for the corresponding period of 1932. And inasmuch as the decline in East Texas operations (where initial production gauges have run high) has been about in proportion with the general decline throughout the state, a substantial decrease in new oil is indicated for the year as against the year previous.

Of course, it may be pointed out on the other hand that the general slackening reflected by the permits will eventually put a premium on new crude reserves, and that such a state of affairs is bound to generate increased wildcat or exploratory drilling with the first evidences of sharp declines in those flush fields standing in the way of stability. But, it is to be remembered that it would take a very important, widespread exploration campaign to equal in completions the results of one month of activity and field work in East Texas.

In Archer County, W. B. Omohundro, Wichita Falls, was granted a permit to drill J. Turbeville A-5, (40-ac), 450 feet east of the center of the west line of Block 35, Club Ranch Survey. J. G. Steele, Wichita Falls, was granted a permit to drill Montgomery 1, (50-ac), 150 feet from north and west lines of Block 133, J. W. Harris survey. Stafford & Hamer, Graham, were granted a permit to drill Archer County 1, (80-ac), 150 feet from east and 2777 feet from north line of A. J. Whitaker survey.

In Bastrop County, Humble Oil & Refining Company, Houston, was granted a permit to drill A. A. Friske 2, (140-ac), 245 feet from east and 444 feet from north line of S. Wolfenberger survey.

In Bexar County, G. W. Arnsdent, San Antonio, was granted a permit to drill San Antonio Farms 1, (228-ac), 600 feet from west and 1750 feet from south line B & 2, S. A. Farms survey.

In Callahan County R. E. Sweeney, Fort Worth, was granted a permit to drill E. L. Finley 1, (39-ac), 160 feet from north and east lines of Section 65, Bayland Asylum survey.

In Coleman County, H. Minister, Coleman, was granted a permit to drill W. S. Thompson 1, (138-ac), 300 feet from south and west lines of No. 739 A. Quigley survey.

In Colorado County, Hughes-Patrick Oil Company, Inc., Houston, was granted a permit to drill Lakeside 1, (1400-ac), southwest corner of P. Reels survey.

In Duval County, Wilkins-Seacord, Alice, were granted a permit to drill E. C. Lundell 2, (80-ac), 1000 feet south of No. 1, Section 48. Central Producers, Inc., Mirando, were granted permits to drill Tuck-Johnson 9, (120-ac), 330 feet from north and east lines NW ¼ NW¼ of Section 44; 8, 330 feet from south and east lines SW¼ SW¼ of Section; 7, 330 feet from south and west lines of SE¼ SW¼ of Section. De Soto Oil Corporation, Houston, was granted a permit to drill Wood-Welder 1, (170-ac), 900 feet from north and 1800 feet from west line of Section 211, J. Poitevent survey. Southwest Drilling Company, San Antonio, was granted a permit to drill R. Wendt 9, (160-ac), 990 feet from south and east lines of Section 43. Sun Oil Company, Dallas, was granted a permit to drill L. Wiederkehr 2, (640-ac), 1320 feet north of No. 1, J. Poitevent survey.

In De Witt County, L. G. Wade, Yoakum, was granted a permit to drill Wade & Koether 1, (35-ac), southwest corner of survey.

In Eastland County, W. F. McDermott, Fort Worth, was granted a permit to drill R. D. Maxwell 1, (160-ac).

In Fort Bend County, Humble Oil & Refining Company, Houston, was granted a permit to drill Lockwood & Sharp C1, 833 feet east of No. 17, Jno. Rabb survey. Gulf Production Company, Houston, was granted permits to drill A. E. Myers 7, (275-ac), 961 feet east of No. 6, Jno. Rabb survey; 8, 1024 feet east of No. 7.

In Falls County, O. A. Barton, Waco, was granted permits to drill Fee 2, (152-ac), 690 feet from east and 150 feet from south line of G. Basquez survey; 1, 670 feet from east and 2350 feet from south line. R. H. Murray, Waco, was granted a permit to drill D. R. Gurley 1, (820-ac), 150 feet from east

and 1400 feet from south line of G. M. Morgan survey.

In Frio County, Jas. E. Greenlee, Ft. Worth, was granted a permit to drill Burns 1, (160-ac), center of Section 23, H. Castro survey.

In Harris County, C. G. McFadden, Houston, was granted a permit to drill S. Minchen 2, (4-ac), south central part of lease, No. 1028 BBB&C survey. Sinclair Prairie Oil Company, Ft. Worth, was granted a permit to drill A. Kermayer 1, (2255-ac), northeast corner of Block 3, J. Denson survey. Roy Beery, Houston, was granted a permit to drill R. A. Hawes 1, (5-ac), 110 feet from north and 510 feet from west line of Jos. House survey.

In Hardin County, Rio Bravo Oil Company, Houston, was granted a permit to drill Fee J97, (127-ac), northeast of No. 94, C. F. S. Jorditt survey.

In Howard County, Continental Oil Company, Fort Worth, was granted a permit to drill B. Overton 5, (320-ac), 635 feet from east and 1955 feet from south line of E½ of Section 5, Block 32, T&P survey; S. T. Eason 3, (160-ac), 660 feet from west and 1980 feet from south line of Section 6, Block 32 T&P survey. E. S. Holman, Inc., Gladewater, was granted a permit to drill Kloh-Rumsey 1, (80-ac), 1170 feet from west and 330 feet from south line of Section 3, Block 32, T&P survey.

In Jack County, F. W. Brodie, Jermyn, was granted a permit to drill W. E. Hunt 1A, (20-ac), 150 feet from north and 450 feet from west line of J. A. Jackson survey; 2B, 450 feet from north and west lines. A. C. Parks, Wichita Falls, was granted a permit to drill J. Miller 1, (190-ac), 2276 feet from east and 1280 feet from south line of E. Smith survey.

In Jim Wells County, F. B. Nayer, Alice, was granted a permit to drill E. G. Vela 1, (200-ac), 660 feet from south and east lines of Section No. 723.

In McLennan County, R. H. Murray, Waco, was granted a permit to drill T. B. Westbrook 1, (327-ac), 250 feet from southwest and 150 feet from southeast line of F. Swope survey. T. W. Murray et al, Waco, was granted a permit to drill W. Sharp 1, (119-ac), 575 feet from north and west line of H. Roberts survey.

In Montgomery County, Alpha Petroleum Corporation, Houston, was granted a permit to drill Keystone Mills 4, (200-ac), 572 feet from north and 466 feet from east line of L. Smith survey. Bishop Oil Corporation, Conroe, (amended location), was granted a permit to drill Hewitt 1, (25-ac) 388 feet west of center of east line of W. S. Rhodes survey. Republic Production Corporation, Houston, was granted a permit to drill C. Dudley 3, (100-ac), 466 feet from south and west lines of C. B. Stewart survey; 4, 466 feet from south and east lines of Section. Sun Oil Company, Dallas, was granted a permit to drill W. N. Foster 7, (640-ac), 933 feet southwest of No. 3, Jno. Bricker survey. Montex Oil Company, Houston, was granted a permit to drill J. F. Springfield 1, (100-ac), 467 feet from north and west lines of Section 12, T&NO survey.

In Nueces County, A. C. Erwin, Corpus Christi, was granted a permit to drill J. Sagarin 1, (45-ac) 160 feet from north and east lines of Section 4, Rge. 9, H. L. Kinney survey. J. A. Kosar, Corpus Christi, was granted a permit to drill L. Folda 1, (80-ac), 630 feet from west and 330 feet from south line of Section 12, Lot 4, Bohemian survey.

In Orange County, The Texas Company, Houston was granted a permit to drill Orange National Bank 1, (150-ac), 150 feet from north and west line of J. Beaumont survey.

In Palo Pinto County, Britton & Gordon, Strawn, were granted a permit to drill Strawn Coal Company 4, (250-ac), 175 feet from north and 2500 feet from west line of I. Ryan survey.

In Polk County, Kirby Petroleum Company, Houston, was granted a permit to drill Kirby Lumber Company 1, (3000-ac), 466 feet from north and west lines of survey in the J. Stephenson survey. Smith & Morrison, Livingston, was granted a permit to drill A. Walters 1 (2½-ac), center of the W. Shadburn survey. Lively & Windham, Livingston, was granted a permit to drill A. Walters 1, (2½-ac), center of the Wm. Shadburn survey. C. B. King Drilling Company, Houston, was granted a permit to drill T. Colville 1, (3071-ac), center of the T. Colville survey.

In Rusk County, Sonron Oil Corporation, Fort Worth, was granted a permit to drill A. Thrash 4, (17½-ac), 695 feet north of No. 2 in the M. J. Pru survey.

In Ward County, Gulf Production Company, Houston, was granted permits to drill G. W. O'Brien 32, (640-ac), 660 feet east of No. 31, Section 6, Block F, G&MMB&A survey, and G. W. O'Brien 31, 660 feet east of No. 30. Alpine Oil Company, Alpine, was granted a permit to drill M. L. Johnson 1, (73-ac), 900 feet from the northeast and 1080 feet from the southeast line of Section 10, Block 32, H&TC survey.

In Webb County, E. M. Jones, San Antonio, was granted a permit to drill Callaghan 2, (320-ac), 330 feet from south and east lines of Section 1211, CCSD& RGNG survey. Reward Oil Company, San Antonio, was granted a permit to drill G. Villareal 1, (40-ac), 150 feet from the north and west lines SW¼ NE¼ Section 1100, Block 6.

In Wichita County, E. N. Brock, Wichita Falls, was granted a permit to drill American Refining Properties 1, (20-ac), 450 feet from the north and 150 feet from the east line, Jas. Walker survey.

In Young County, Pearl Oil Company, Dallas, was granted a permit to drill R. O. Andrews 1, (37-ac), 150 feet from north and west lines of the 1399 TE&L survey. R. J. Watson, Newcastle, was granted a permit to drill R. C. Stringer 1, (70-ac), 1700 feet from east and 1250 feet from the south line of section, 252 TE&L survey. Petroleum Production Company, Wichita Falls, was granted a permit to drill J. K. Jeffery 1, (80-ac), 450 feet from the west and 933 feet from the south line of the 49 TE&L survey. White & Duncan, Wichita Falls, was granted a permit to drill G. R. Smith 1, (40-ac), 150 feet from the south and east lines of the section, in the 1365 TE&L survey.

South Texas Wildcats Give Promise of New Districts

San Antonio, Texas.—A number of South Texas wildcats are showing for possible production at various depths to 5000 feet. Several of them look like big wells, opening important new districts.

The most outstanding is in Refugio County, where Greta Oil Company's O'Brien 1 is showing for a big producer at 4396-4403 feet. It is reported that as high as $1000 an acre, half cash and half oil, is being paid for close in stuff. In fact, it has turned the interest to the whole "trans-salt dome region."

In Atascosa County, Jacob, Buzzini & Pickett (Loma Oil Company) have drilled E. P. Tartt 1, Section No. 144, to 1265 feet, where it is a failure. August M. Blume's W. T. Shaw 1, Farquhar survey, is down 1700 feet. O. W. Killam's O. K. Seitz 1, Cruz Ladin Survey No. 45, is drilling below 3000 feet.

Bastrop County

Humble Oil & Refining Company's Friske 2, S. Wolfenberger survey, topped the Serpentine at 2465 feet, and is drilling in the same hard formation

at 2480 feet. It is in the Hilbig district Bastrop County. Marts & Bevans are moving on Reyes 2, Addison Lytton survey.

In Bee County, V. I. Grisham is rigging J. M. Rapp 1-B, Section 12, C. Miller survey. John O'Neill et al's Plummer 1, Section 34, is drilling at 2935 feet.

In Bexar County, C. I. Albertson is drilling in J. C. Vogt 1, Section 2, McCullough Survey No. 53, at 906 feet. Motes - Campbell Company's R. T. Pruitt 1, McCullough survey, is bailing at 1062 feet. Earl S. Post's Bilhartz 1, F. Rolen Survey No. 45, is bailing after resetting casing at 783 feet.

Two wells are active in Caldwell County. Humble Oil & Refining Company's F. Gray 12-C, Hinds survey, is swabbing at 2660 feet. F. L. Thomson's M. F. Lawler 1, James Berry survey, is heading about 60 barrels of oil from 2045 feet.

Duval County continues as South Texas' hot spot. M. J. Coffey has derrick up for Parr 1, Section 27. DeSoto Oil Company is drilling Welder & Wood 1, Section 211, at 1360 feet. G. G. Mortimer et al's Peal 1, Section 792, has spudded. Navarro Oil Company is drilling C. W. Hahl 7, Section 360, at 1625 feet, after having the Cole sand from 1540-63 feet. Wright & Wilson's Welder & Wood 2, Section 102, is rigged up. John O'Hearn's Smith and Corkill 1, Section 491, is drilling at 700 feet. George Parr et al's C. W. Hahl 1, Section 46, is drilling at 2350 feet. Sarnosa Oil Company has skidded derrick to Weil 7, Section 130. Sun Oil Company is rigging Weiderkehr 2, Section 359. The Texas Company's H. Wendt 6, Section 42, is drilling at 1650 feet, having passed through the Cole sand at 1512-24 feet, where it showed 420 pounds on a ½-inch choke. Whisenant & Trenchard are drilling Duval Ranch 1, Section 76, at 1585 feet, and have spudded and shut down Duval Ranch 1-B, same section. Windsor Oil Company is rigging W. R. Peters 1, Section 33.

Seaton A. Barnes, Jr.'s, R. Holbein 1, Section 1, Block 54, Las Animas Grant, Jim Hogg County, is preparing to spud in.

Crude Oil Royalty Company's W. D. Wade 1, Allen survey, lot 2, Jim Wells County, blew in wild from 2548 feet, and has been brought under control. Casing is to be run for completion.

In Lee County, Patton Brothers are down to 5700 feet in C. A. Turner 1-B, D. Hudson survey.

Live Oak County

Jacob, Buzzini & Pickett may have a new field in northwestern Live Oak County. I. W. Griffith 1, M. McCowen survey, is coring down after drilling plugs at 915 feet.

C. W. Gillette et al's J. Dickinson 1, Block 29, A. Barrera survey, in McMullen County, has set casing to test a sand at 688-94 feet. C. R. Pope, Inc.'s E. L. Miles 1, Section 14, S. & M. Survey, is drilling at 1625 feet. SR&C Oil Company and Sinclair Prairie Oil Company's LaChusa 2, Section 36, has spudded.

R. M. Yantis is building derrick over Adams 1, in the Adams field, Medina County, to deepen from 700 feet.

CNT Oil Company's L. M. Vance 1, Nueces County, is drilling at 4400 feet. It is in survey 402. Gulf Port Oil Company's Humphrey 3, Section 406, is drilling at 4130 feet. A. F. Holliday tested 22 thribbles of oil with 25 pounds pressure on a three-minute drill stem test from 4850-69 feet, and has set casing. It is F. J. Smith 2, Block 35, Shepard survey. Houston Oil Company's E. McGregor 1, a deepening job, topped the sand at 4852 feet and was still in it at 4869 feet. Sinclair Prairie Oil Company is preparing to drill in T. H. Isensee 1, Section 404, which has a total depth of 4899 feet. S. F. Hulburt has located Poenisch 1, Block 32, Encinal survey.

In Refugio County, Humble Oil & Refining Company has drilled plugs, set screen and is ready to swab O'Conner 5, F. Rios survey, which topped the sand at 3194 feet and drilled to 3204 feet. Greta Oil Company is ready to drill out plugs in its O'Brien 1, Winfield survey, showing for production at 4396-4403 feet. Simmons & Means are to drill Vidauri Oil Company's J. F. Welder 1, which has derrick up.

Victoria County

Stonleigh Oil & Gas Company's E. B. Terrell 1, R. Manchola survey, Victoria County, which looks like a big gasser from 4433-37 feet, is drilling out plugs. The Texas Company's McFadden 6-A, is resuming from 1216 feet. It is in the A. J. Gray survey.

Gibson et al are coring Smith 1, Block 5, Section 1102, at 1575 feet. It is in Webb County. E. M. Jones is drilling Callaghan 1, Section 603, below 2000 feet. O. W. Killam is making a drill stem test at 2385 feet in Garcia-Villareal 1, Block 5, Section 1100. Brooklyn Oil Company is drilling deeper in Puig 1, Block 12, Edgington subdivision of the Puig ranch, now down 1854 feet. Montex Oil Company's Laurel 1, Section 270, Block 4, is a derrick; Caltex 1, Section 768, Block 12, is a location as is Laurel 1, Block 1, Section 719. Shankle & Roche are drilling W. W. Stell 1, Section 37, at 1100 feet. Seagraves & Salsbury are preparing to rig A. E. Gates 1, Block 12, Survey 64. M. Stein's J. M. Garcia 2, Block 16, Section 720, is making location. Texas Unity Oil Company's L. Yeager 1, Survey 51, is drilling around 400 feet. J. W. Edwards has moved on Volpe 1, Section 71, Block 2, while Washbaugh & Roberts have located M. Bruni 1, Section 139.

Hilbig's Biggest Well Makes 10 Barrels Hour

San Antonio, Texas.—Humble Oil & Refining Company's Friske 2 in the Hilbig field of Bastrop County, got the top of the Serpentine at 2465 feet, and at last reports was still drilling in the formation at 2520 feet. It was reported to be dry and hard. The well is in the Wolfenberger survey.

Southwest of the field, however, in the Riddle district, Witherspoon Oil Company (Chiquita) has completed the largest producer in that field. It is M. I. Harris 1, southwest corner of 40-acre tract in John Maxmillan survey, about 900 feet northeast of production. The well is flowing 10 barrels an hour on choke. It topped the chalk at 2121 feet, Serpentine at 2142 feet, went out of Serpentine at 2165, and drilled to 2309 feet in a formation referred to as the Dale lime.

North Government Wells Drill Campaign Assured

San Antonio, Texas.—An extensive development campaign in the northern section of the North Government Wells field, Duval County, is in prospect with Navarro Oil Company announcing 12 more locations, each of which will require an offset. This company has completed six producers on its 320-acre lease, being the west half of Section 360, each of which made from 20 to 65 barrels an hour on choke when first brought in.

The company is offset by Humble Oil & Refining Company and Sun Oil Company on the east and west lines, the latter company already being required to drill several offsets. The Texas Company, likewise, is carrying on a campaign in the northern portion of Section 42.

Wilkens Seacord sold the east half NE Section 48, Lundell fee, to Storey & Smith of Tulsa, Oklahoma. The tract included his recently completed 25,000,000 cubic foot gasser, which had the sand from 2273-2322 feet. This lease is between the North Government Wells field and the discovery field and will receive considerable development.

Zapata County Wildcat Makes 30 Million Gas

San Antonio, Texas.—O. W. Killam completed a 30,000,000-cubic foot gasser in wildcat territory of northern Zapata County from a total depth of 1842 feet. It is in the trend of this large gas zone.

The well is Bruni 5, located 150 feet from the southeast and southwest lines of Block 53, Blas Uribe tract, San Ignacio subdivision of the J. V. Barrego grant.

Several Large Producers Completed in South Texas

San Antonio, Texas.—Several large producers were included in the week's completions in South Texas. The largest was a serpentine well in the Hilbig field, Bastrop County, good for 100 barrels an hour on choke. They follow:

Company, Well and Location	Init. Prod. Bbls.	Depth
Atascosa County—		
Jacob, Buzzini & Pickett (Loma) E. P. Tarrt, Sur. 144	*	1265
Bastrop County—		
Humble O&R Co., A. Hassler 1, A. Mays Sur., 1-inch choke	2400	2507
Marts & Beavans, Reyes 1, A. Lytton Sur.	*	2182
Witherspoon Oil Co. (Chiquita), M. I. Harris 1, John Maxmillan Sur.	240	2309
Bexar County—		
Wm. V. Ballard, S. A. Land & Dev. Co. 1-A, I. Perez Sur.	*	1156
Caldwell County—		
F. L. Thomson, M. F. Lawler 1, J. Berry sur.	60	2045
Duval County—		
Magnolia Pet. Co., M. Ruiz 3, Sec. 575	100	2466
Navarro Oil Co., C. W. Hahl 6, Sec. 360	480	2304
Winkins-Seacord, Lundell 2, Sec. 48	¶25	2322
Shasta Oil Co., W. R. Peters 3, Sec. 175	*	2352
Stanley Smith, M. Olivarez 1, Sec. 80	*	3620
Sun Oil Co., Weidekehr 1, Sec. 359	¶3-10	2261
Texas Co., H. Wendt 7, Sec. 42	¶15-100	2248
Webb County—		
O. W. Killam, Garcia-Villareal 2, Block 5, Section 1100	*	2391
Moca Oil Co., Duval Ranch 4, Blk. 22, Sec. 3, ZSL Sur	¶25	1214
M. Stein & Montex Oil Co., J. M. Garcia 1, Blk. 16, Sec. 720, ½-inch choke	500	2292
Wise & Jackson, J. M. Garcia 2, Blk. 7, Sec. 1100	100	2212
Zapata County—		
O. W. Killam, Bruni 5, Blas Uribe tract, J. V. Borrego Grant, Blk. 53	¶30	1842

*Failures; †Junked; ¶Million cu. ft. gas.

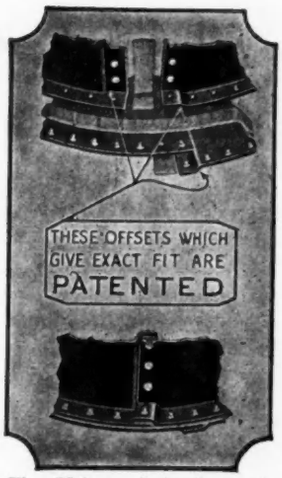
Production Extended at Laurel; More Operations

San Antonio, Texas.—An east extension to the Laurel field, Webb County, into virtually condemned territory and announcement of several more operations again places this district in the limelight.

M. Stein and Montex Oil Company's J. M. Garcia 1, located 150 feet out of the west corner of Block 16, Section 720, 1000 feet east of production, flowed 500 barrels on a one-half inch choke from 2280-92 feet.

Montex Oil Company, South Texas

MALONEYS
are built of the following
QUALITY PRODUCTS



The Maloney "crimp" at all seams and joints, including DECK SEAMS, promotes tightness and strength.

Keystone Copper Steel Blue Annealed Sheets, manufactured by the American Sheet & Tin Plate Company, Gary, Indiana.

Heat treated bolts with reinforced heads of 90,000 lbs. tensile strength, manufactured by Lamson Sessions Company of Cleveland, Ohio.

Angles and Channels made of First Run Steel, manufactured by the Illinois Steel Company, Chicago, Illinois.

Special, high grade cloth inserted rubber packing, manufactured by the Thermoid Rubber Company, Trenton, N. J.

Tanks painted inside and out with General Paint Corporation's New Synthetic Gum Vehicle, containing alkali-proof and water-proof Inhiburine, and the Aluminum Company of America's Alcoa Aluminum Powder — 1¾ lb. to the gallon of liquid.

Maloney accuracy in manufacturing assuring tightness of fit when assembled; all seams including deck seams are heavily reinforced with channels, and the tanks are manufactured in accordance with A. P. I. specifications and recommendations.

Positive vacuum pressure valves and thief hatches in all decks, eliminating evaporation.

"Alone in Quality"

MALONEY TANK MFG. CO., TULSA, OKLA.

Distributers at All Principal Petroleum Points
Packed in Steel-Bound Crates for Export

MADE OF KEYSTONE AMERICAN

MALONEY PATENTED BOLTED COPPER-STEEL TANKS

MALONEY
ALONE

Oil Company, Reward Oil Company, Cole-Wise-Laurel (formerly Wise & Jackson) are active with nearly 10 locations divided between them.

Expect Two New Fields in Refugio-Victoria Area

San Antonio, Texas.—The Refugio-Victoria area might well be termed South Texas surprise spot.

Humble Oil & Refining Company's O'Conner 5, 933 feet southwest of O'Conner 4, F. Rios survey, topped a sand at 3194 feet, drilled to 3204 feet, and is in process of completion. The No. 4 well was a producer 100 feet shallower, as was O'Conner 3, discovery well of this sand. All of the wells are in a straight line. The fifth well topped the shallow gas sand regular at 2323 feet, found sands from 3049 feet down with slight odors of oil. As a result, the new well might be considered as having found a new sand for the McFadden-O'Conner district of Refugio County.

Two other wells in these counties are in process of completion, both of which are expected to open important new districts.

Greta Oil Company (George E. Smith) is waiting on cement after setting casing in J. W. O'Brien 1, Winfield survey. The well, located five miles northeast of the Fox pool and nine miles northeast of Refugio, has a sand at 4396-4403 feet, which tested 42 fourbles of oil in 14 minutes.

Acreage in the immediate vicinity of the well is reported to be bringing big prices, as much as $500 cash and $500 out of oil.

About four miles southeast of Victoria, Stonleigh Oil & Gas Company is drilling plugs in E. B. Terrell 1, R. Manchola survey, showing for at least a big gasser at 4433-37 feet.

State Wins in Suit Over Rich Yates Field Lands

Austin, Texas.—The Texas Supreme Court has terminated litigation involving much of the best acreage in the Yates field, Pecos County, and incidentally releasing around $50,000,000 in royalties and rentals which have been in escrow during the suit which has been in progress for several years. The decision upholds the claim of the State of Texas and others that vacancies exist as against the claims of the Whitesides heirs and others that the land in question is properly a part of surveys to which they have title. The Texas public school fund will receive approximately $1,500,000 from the division of the funds impounded.

Live Oak-McMullen County Wildcats Show Favorably

San Antonio, Texas.—Two wildcats in the Jacob district of Northern Live Oak and McMullen Counties loom up as possible producers and are in the process of completion.

A little more than three miles west of the town of Whitsett, and about the same distance north of the Jacob pool, Jacob, Buzzini & Pickett (Loma Oil Company) are coring after drilling plugs in I. W. Griffith 1. The well topped a sand at 906 feet, went to 915 feet, and set pipe. Cores showed some saturation and an odor of gas. The well is 562 feet from the west line and 161 feet from the south line of the 163-acre tract in the M. McCowen survey, Live Oak County.

Farther north and a little west, in McMullen County, another wildcat has a sand at 689-94 feet and has set casing. It is C. W. Gillette et al's J. Dick-

TRUE ECONOMY

Consists in taking no chances on such an important oil field product as screen.

•

RIBS PLACED ON PIPE

add strength to Stancliff Screen

•

STANDS HARD USAGE

•

SCREENS FASTER

•

(Patented)

STANCLIFF SCREEN

The Standard of the World

★ ★ ★

Howard Smith Co.

2416 Railroad Ave. • Phone Preston 8411

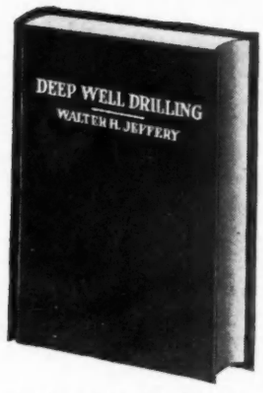
HOUSTON, TEXAS

THIRD EDITION

of the Well Known Book

DEEP WELL DRILLING

by WALTER H. JEFFERY



Re-written and revised to date, and enlarged by the addition of the following New Chapters:

Geophysical Prospecting and Air Mapping.

Straight Hole Drilling and the Treatment of Crooked Holes.

Water Supply.

The Gas-Air Lift Method of Producing Oil.

A. P. I. Codes.

Preparatory to writing the new book, the author spent weeks in a first hand study of modern methods of drilling by the rotary system, and of completing wells, controlling high pressures and operating wells in the deep fields of California and Oklahoma.

The third edition contains 816 pages, 150 pages more than the second edition, and 452 illustrations, but the price is the same, $6.00.

Send Check to

GULF PUBLISHING COMPANY

3301 BUFFALO DRIVE HOUSTON, TEXAS

inson 1, located 740 feet from the northwest and 750 feet from the northeast lines of the 100-acre tract out of Block 29, A. Barrera survey. It is about six miles north of the Jacob pool.

The Jacob pool was opened about a year ago by Jacob, Buzzini and Pickett. A number of wells have been drilled to the 950-foot sand since that time, all of them coming in as flowing producers and some making as high as 175 barrels.

Sharp Drop in Texas Gulf Coast Area Completions

Houston.—Field results in the Texas sector of the Gulf Coast dropped this week to the lowest point in several months. Only 14 completions were recorded, and of these only 11 were producers.

Conroe field completed nine wells, the lowest number for that spot this year. With the exception of a flank completion 3500 feet off Hankamer dome and a pumping well in Pierce Junction, other fields of the Texas Gulf Coast reported no completions.

A detailed list of the week's completions follows:

Company, Well and Location	Init. Prod. Bbls.	Depth
Conroe Field—		
Amerada Pet. Corp., Hall Crump 1	1440	5140
Farlyn Oil Co. & Navarra Oil Co., Thompson 1	1920	5130
Gulf Coast Dr. & Prod. Co., Keystone Mills B-4	1560	5099
Mortex Oil Co., Springfield 1	816	5146
Sun Oil Co., B. E. Jones 1	2136	5139
B. E. Jones 2	1752	5128
The Texas Co., Moody 11	1560	5126
Moody 25	1896	5117
Tide Water Oil Co. & Republic Prod. Co., South Texas Development Co. 5	4080	5109
Esperson Field—		
Cranfill-Reynolds, Moore 10-B (wo)	*	7323
Hankamer Field—		
Gulf Prod. Co., Crowe & Jacobs 1	185	4921
Jefferson County (Cheek Dome)—		
Jack Schultz, O. M. Todd 2, Wm. Carr Survey	*	7355
Pierce Junction Field—		
Rio Bravo Oil Co., Settegast A-14	100	5395
Polk County—		
Joseph L. Anderson et al, E. I. Duke 1, Peter J. Menard Sur.	*	4974

*Failures; †Junked; ¶Million cu. ft. gas.

New Production Indicated In Region of Garwood

Houston.—Plymouth Oil Company's F. L. Ream 1, located in the northeast corner of Section 47, I&GN RR Survey, Colorado County, and in the region called Garwood, tested 400 feet of oil cut mud in seven minutes when sand at 6140-6200 feet was subjected to a drill stem test this week. The well showed 400 pounds pressure with three eighths-inch chokes on top and bottom. The test is on a 4700-acre block.

Ream 1 has an elevation of 163 feet. It topped the Hockleyensis at 4680 feet; the Jackson at about 4500 feet; and was in the Cockfield at 5500 feet.

Houston.—Several important wildcat prospects were brought to the fore in the Texas Gulf Coast this week due to significant developments of both encouraging and discouraging natures. In addition, a number of new tests were started on prospects which have not been drilled.

Cranfill-Reynolds Oil Company's R. C. Swearengen 1, located in a 96¼-acre tract in the C. K. Ham Survey, five miles southwest of Bellville, Austin County, was abandoned in salt water at 4540 feet.

Northeast of Raccoon Bend field in Austin County, Goodnight-Donald Oil Company, having cemented 10-inch casing at 1092 feet, is drilling below 2580 feet in Deutrich 1.

The Flag Pond area of Brazoria County will receive a test soon. E. A. Anderson et al's Reynolds 1, in the 1221-acre Reynolds tract in the Johnson-Walker Borden League, is a derrick.

Danciger Oil Refining Company's W. S. Hunt 2 at Pledger, touted last week as likely to increase the importance of the prospect, is showing considerable pressure and an odor of distillate in sand at 6750-6850 feet. It is waiting on casing.

Rycade Oil Corporation and Amerada Petroleum Corporation's Seaburn 3, which showed for an extension of Stratton Ridge field in Brazoria County last week, or for discovery of a new dome, went to salt water when tubing was run at 4500 feet. Part of the hole will be plugged to cut off the lower portion of the sand.

In Chambers County, Paul Mills and Ed Jones are drilling below 1006 feet on Gau 1, located 15 miles south of Anahuac in the John S. Roberts Survey.

In Colorado County there are four active wildcats outside of Plymouth Oil Company's Ream 1 which showed for a producer this week at 6200 feet. Two of these are in the Garwood district: Danciger Oil Refining Company's Raver 1, BBB&C RR Survey No. 1, was reported in salt water sand at 4278 feet. Humble Oil & Refining Company's McLane 1, Section 42, I&GN RR Survey, is drilling below 6191 feet, where shale was logged. In the Eagle Lake district of the county, Hughes-Patrick Oil Company is shut down at 1445 feet. Two miles northeast of Columbus, McCollock Oil Company has made a location for Kansteiner 1, 300 feet out of the northeast corner of a 243-acre tract in the Leander Beason Survey.

Cullen and West's Gehr 1, north outpost of Thompsons field, Fort Bend County, seems to have called the limits of the field in that direction. Friday it was drilling below 5915 feet without any show. At 5550 feet the drillers log carried the same notation. Production at Thompsons comes from around 5300 feet.

Grimes County has two active wildcats. Petroleum Southwest Corporation's Greer Brothers 1, in the Pat O'Connor Survey, Carlos district, was drilling below 911 feet. Koch et al's Haferkamp 1, 3½ miles northwest of Whitehall and in the Samuel Fulton Survey was reported shut down for water at 1075 feet.

Houston Oil & Republic Production Company's Ariola Fee 3 at Ariola dome, Hardin County, is swabbing oil and water at 4320 feet after having set 18 feet of screen and run tubing to 4300 feet.

Danciger Oil Refining Company's Hooks 1, Batson field flank test, Hardin County, is in sand and shale showing considerable gas at 4430 feet. Last week the well showed some oil at 4404-20 feet. Seven Wells Corporation's Teel 1, flank test off Saratoga field, spudded this week.

H. H. Sloan has taken over the Indian Hill Oil Company's Cora V. Peden 1, five miles east of Tomball in northern Harris County. This test has been shut down at 525 feet for several weeks. Six miles southeast of Hufsmith-Tomball area, a new operation was announced by C & C Drilling Company and Van Mc Phail et al. Erhardt 1 will be drilled on a 100-acre tract in the C. H. Delesdenier League.

Another new wildcat location in Harris County was that of Burns, Ogg and Houston's Kenning 1. It will be drilled east of Crosby and 330 feet north of the south line and 550 feet east of the west line of the Kenning 312-acre tract in the H&TB RR Survey, Abstract 391. Hamilton et al also announced a wildcat location in Harris County. Their

Hargrove 1 will be drilled one mile west of Fairbanks, or 1750 feet west of the east line and 645 feet south of the north line of the WC RR Survey, Block 1. Sinclair Prairie Oil Company is moving in a rig for Kirmayer 1 in a 643-acre tract in the Jesse Denson Survey. John Deering's second flank test at Hockley field, Warren 3, is temporarily abandoned at 2700 feet. Another test in the same region, H. B. Jordan's Cochran 1, in the J. Jordan Survey, is drilling rock slightly below 147 feet.

In Jackson County, The Texas Company is fishing at 3847 feet in shale and lime in I. N. Mitchell 1, located north of Lolita in the Clements subdivision of the S. F. Austin Survey. Turnbull et al's Mauritz 1, in the east edge of the town of Ganado, Jackson County, is drilling slightly below 2000 feet.

Carroll and Miller's Mashman 1, Jefferson County wildcat which has been shut down at 960 feet for several weeks, is drilling below 1300 feet. It is in the W. B. Dyches Survey. Coast Oil & Gas Company's J. O. B. Young 1, three miles northeast of Port Arthur and in the Joseph Grigsby Survey, is shut down in shale at 4840 feet. Elam and Denny's Broussard 2, John McGaffey Survey of Jefferson County, is fishing for drill stem at 3440 feet. Four miles north of Beaumont and in the A. Williams Survey, W. J. Parker et al are drilling in shale slightly below 1800 feet in Mrs. Winnie T. Rorick 1.

Liberty County has a number of interesting wildcats. Toner and Purdy's Martha E. Roberts 1, Ace dome prospect in the Joaquin F. de Rumayor Survey, was abandoned this week at 5300 feet after having been shut down several weeks at that depth. Gulf Production Company's Crowe and Jacobs 1, flank test 3500 feet off Hankamer dome which was listed as a completion at 4921 feet, produced 30 per cent salt water and will be deepened. Yount-Lee Oil Company's E. W. Boyt 1, also east of production at Hankamer, is drilling in shale near 7000 feet.

In Matagorda County Cockburn Oil Corporation's Hawkins 5, Sheppards Mott, is drilling in sidetracked hole at 5270 feet. Humble Oil & Refining Company's Pierce Estate 2, Pledger district of the county, logged shale at 6025 feet.

United North and South Development Company has several tests at Buckeye in Matagorda County. Sheldon Unit 25, No. 1, is drilling below 2400 feet in sticky shale. No. 1, Unit 14, is in oil sand at 7715-7800 feet. Stoddard 1, Unit 1, the discovery well which originally was completed at 7926 feet, is coring oil sand at 7860 feet on a workover job in sidetracked hole. Stoddard 2, Unit 6, is waiting on a whipstock at 6060 feet after having sidetracked at 5590 feet.

Polk County wildcat interest is centered on those drilling in the vicinity of the Schwab-Shell pools called Livingston. Roxie Oil Company's Kavanaugh & Collins 1, 10,000 feet north of Schwab's discovery well and in the Augustine Viesca Survey, is preparing to drill plug after having set 6⅝-inch casing at about 4240 feet. Englewright et al's Kingsbury 1, in the H. J. Pratt 40-acre tract in the same survey, is temporarily abandoned in shale at 4680 feet. Dick Schwab's Craig 1 is standing cemented with 10-inch casing at 475 feet. Kirby Petroleum Company's Kirby Lumber Company 1, James Stephenson Survey, is rigging up. Carl B. King's U. S. Alabama Indian Reservation 1, Thomas Colville Survey, is shut down in shale at 3100 feet. Four miles east of Leggett in the D. B. McComb Survey, Boone, Clarke and Boone's Texas Long Leaf Lumber Company 1 is drilling near 3800 feet in shale.

Republic Production Company and Houston Oil Company's Sterne Fee E-1014 No. 2, located in the Spurger area, was reported drilling in shale at 5800 feet.

Trapshooter Riley Oil Company's Menke 1, Hempstead district, Justo Liendo Survey, is drilling near 4000 feet.

Cline and Taylor et al's Chadwick 1, six miles west of Chappel Hill in Washington County, was drilling sandy shale at 2170 feet.

In Wharton County, Pure Oil Company's Stewart 1, south of Louise and in Section 25 of the Morris Cummings Survey, cored a brittle shale with no show at 6670 feet.

Monalta Drilling Another Well in Border Field

Sweetgrass, Mont.—In the Border, or Red Coulee, field which lies across the international line between Alberta and Montana, another well is to be drilled this year by Monalta Oil Company, according to an announcement which was recently made by John Buckley. The company is the original leaseholder in the field and all of its holdings are on the Buckley ranch. There are two completed wells which have produced consistently for the last three years. New location is to be in the southwest corner of Section 1-37n-4w, an east offset to the Hannah-Porter Oil Company's No. 2 and a north offset to the Alberta-Pacific Consolidated's Buckley 1.

Tomball Wildcat to Test Sandy Shale on May 20

Houston.—Texas Gulf Coast wildcat activities were featured May 19 by announcement that Magnolia Petroleum Company early May 20 would make a production test of Kobs 1 in the Hufsmith-Tomball area of Harris County.

This wildcat, one of two being drilled by Magnolia Petroleum Company that has occupied the limelight of the Gulf Coast for more than a month was unofficially coring sandy shale with an odor of oil at 5555 feet May 19. Its completion as a producer would bring into play a drilling campaign which might easily eclipse the present campaign in Conroe field, 12 miles to the northeast.

Magnolia's Martens 1, another wildcat being drilled in the same area, was reported to have cored salt water sand at 5680 feet, a situation which more or less throws hopes for Hufsmith-Tomball on the outcome of the drill stem test slated for Kobs 1.

Geologically and geophysically the area seems "right" for an oil field, but opinion still is divided as to whether either of the present tests will find commercial production.

Manvel Production Extended Northwest

Houston.—Production at Manvel was extended 800 feet northwest this week by completion of The Texas Company's Davis 1 at 3871 feet for an initial production of 27 barrels net oil per hour and 20 per cent wash water. The oil production rapidly increased to 37 barrels net oil per hour, the percentage of wash water remaining constant throughout the early hours of the well's life.

Davis 1, which set 23 feet of screen, was produced initially through a three eighths-inch choke. Tubing pressure was 150 pounds; casing pressure, 190 pounds. The oil was 22.5 gravity at 92 degrees temperature.

Scott et al Will Test Twin Dome Near Kurten

Houston, Texas.—F. H. Scott and associates of Fort Worth, were moving in materials late last week for derrick to be used in drilling Klintworth 1, first test on a geologically outlined twin-dome prospect in northeastern Brazos County, one mile north and east of the town of Kurten and nine miles northeast of Bryan. It is expected that drilling will be under way on or before June 1.

Evidence of a double-dome structure, possibly a salt dome, was found through geological work, according to the operators; and it was pointed out that the

prospect lies along a pronounced salt dome trend, being between the Brenham and Clay Creek domes to the south and the interior salt domes of East Texas to the north. No geophysical investigation was undertaken in the area.

Location of the wildcat on the Kurten prospect will be 400 feet from the southeast line and 300 feet from the northeast line of the Klintworth 85-acre tract in the Isaac Curd survey. It is approximately midway between the north and east corners of the survey and 400 feet from the northeast line of the survey.

The Yegua formation is at the surface at the drilling site, and it is planned to drill through the Wilcox formation or to about 3750 feet if production is not established at a shallower level. Present plans also contemplate at least one additional test well, as both of the "highs" of the twin-dome are to be tested.

Two Commercial Wells in Louisiana Gulf Coast

Houston.—Louisiana Gulf Coast reported two commercial completions last week: S. Rhodes Latrielle 107, a workover in Jennings field, was good for 900 barrels at 1845 feet, and The Texas Company's Louisiana Land & Exploration Company Leesville 4, at Leesville, gauged 1728 barrels per day initially:

A list of the week's completions follows:

Company, Well and Location	Init. Prod. Bbls.	Depth
Beauregard Parish—		
Acme Oil Co., Long Bell Lbr. Co. 1, Sec. 26-2s-10w	*	3034
Jennings Field—		
S. Rhodes, Latrielle 107 (wo)	900	1845
Leesville Field—		
The Texas Co., L. L. E. Leesville 4	1728	4461
Starks Dome—		
Union Sulphur Co., Lutcher Moore 1	*	3050

*Failures; †Junked; ¶Million cu. ft. gas.

Only Routine Progress in South Louisiana Wildcats

Houston. — While drilling continued without any lengthy interruptions on most of the wildcats active in parishes of Coastal Louisiana this week, little of importance developed in any of them.

In Ascencion Parish, H. E. Dalton et al's Many 1, Darrow dome, is a location. At the same dome Rio Bravo Oil Company has three tests. Community 1, discovery well, has cemented off some of the sand originally taken in when the well was completed at 4035 feet and is preparing to work-over. Community 2 is preparing to go on the pump at 4827 feet, and Gumble 1 is drilling below 5925 feet.

Barnsdall Oil Company has spudded William Cypress Company 1 in Section 38-14s-14e, Assumption Parish, on what is known as the Labadieville prospect.

In Section 29-15s-10w, Cameron Parish, Southern Sulphur Company is drilling ahead on Gulf of Mexico 1.

Pure Oil Company's deep test in Sweet Lake field, Yount Lee 11, is drilling in sticky shale slightly below 8030 feet, making 12½-inch hole.

O'Brien Brothers, Incorporated's, Samuel Haas 1, Section 23-4s-1w, Evangeline Parish, is drilling below 1680 feet.

Standard Oil Company of Louisiana's Myrtle Grove-Wilbert 4 at Choctaw dome, Iberville Parish, was reported drilling below 1000 feet.

At Chacahoula dome, La Fourche Parish, V. M. Miller's Sanbury 1, Section 65-15s-15e, was reported drilling below 866 feet. Southern Sulphur Company's State Bay Marchand, Section 29-23s-23e, is rigged up.

Texas Gulf Sulphur Company's La Fourche Levee Board District 1, at Lake Hermitage, Plaquemines Parish, is drilling above 1000 feet.

Southern Sulphur Company has two

STRENGTH

49% greater than concrete

•

The NEW LARKIN BAKELITE GUIDE has Greater Strength than any other guide

WHILE ONLY HALF THE WEIGHT OF CONCRETE, under engineering tests withstood a compressive strength 49% greater than concrete.

It is not only **stronger, lighter,** and **tougher,** but is **shock-resistant** and cannot be broken or fractured by coming in contact with obstructions in the hole.

LARKIN BAKELITE VALVES and guides used in Larkin Float Shoes and Guide Shoes . . . **QUICKLY AND EASILY DRILLED UP** and circulated out of the hole.

The name "L A R K I N" has grown to mean LEADERSHIP . . . QUALITY FIRST . . . PROTECTION . . . for operators.

BE SAFE — BE SURE — SPECIFY LARKIN.

•

LARKIN PACKER COMPANY

ST. LOUIS, MISSOURI

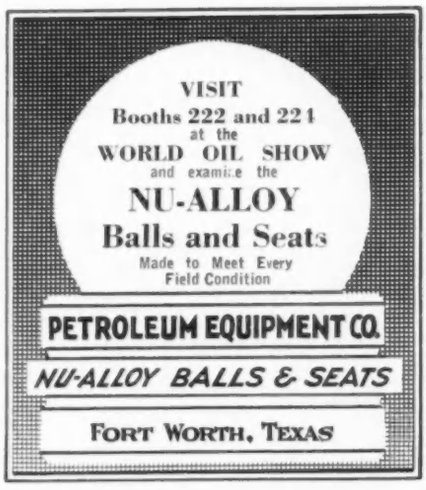
Warehouse stocks at Houston, Texas; Oklahoma City, Okla., and East Texas

AT ALL SUPPLY STORES

wildcats rigged up and shut down in St. Bernard Parish. They are: State Lake Lery 1, a test of Olevier prospect, and State Lake Borgne 1, a test of Shell Beach prospect.

At Gueydan dome, Vermilion Parish, Pure Oil Company's Mulvey Irrigation Company 2 has 29 feet of screen left in the hole at 4880 feet blocking temporarily plans to drill deeper Mulvey 3, which flowed at the rate of 122 barrels per day last week at 4278 feet, is going in the hole with perforated liner at 4299 feet.

Robert K. Williams' Llano del Rio 1, SE NE Section 6-1n-9w, Vernon Parish, is drilling below 822 feet.



Fourteen Drill Permits Granted in Louisiana

Shreveport, La.—Fourteen drilling permits issued this week brought Louisiana's total for the year up to 175, which compares with 173 for the corresponding period of last year. Sabine Parish led with four permits, and Iberia and Morehouse Parishes had two each.

In Caddo Parish, Pyramid-Louanna, Shreveport, was granted a permit to drill Winter 1, 1880 feet north and 560 feet west of the southeast corner of Section 4-18n-16e.

In Calcasieu Parish, Union Sulphur Company, Sulphur, was granted a permit to drill Industrial Lumber 1, 1916 feet south and 2254 feet west of the northeast corner of Section 30-9n-12w.

In Claiborne Parish, Haynesville Partnership, Shreveport, was granted a permit to drill J. L. Garrett 1, 220 feet east and 220 feet south of the northwest corner SW¼ Section 24-23n-8w.

In Iberia Parish, Jefferson Lake Oil Company, New Iberia, was granted permits to drill Lake Peigneur 55, 720 feet southeast of No. 34 and 930 feet northwest of No. 54, and Lake Peigneur 56, 760 feet sowthwest from No. 31, and 1280 feet northwest from No. 54.

In Morehouse Parish, United Gas Public Service Company, Houston, Texas, was granted permits to drill Crossett 30, 2490 feet east and 1320 feet south of the northwest corner of Section 25-22n-4e, and Patton 2, 3375 feet south and 2917 feet east NWc Section 12-20n-4e.

In Ouachita Parish, United Gas Public Service Company, Houston, Texas, was granted a permit to drill U. S. Government 2, 769 feet east and 1939 feet north of the southwest corner of Section 1-19n-3e.

In Sabine Parish, E. F. Neely, Shreveport, was granted a permit to drill Clarence Garner 1, 417 feet west and 927 feet north of the southeast corner SW¼ NE¼ of Section 15-7n-11w. Robertson Drilling Company, Fort Worth, Texas, was granted a permit to drill J. W. Hughes 2, 660 feet west and 330 feet south of the SEc NW¼ NW¼ Section 36-8n-12w. A. J. Brown was granted a permit to drill 4 L. Company 1, 330 feet east and 410 feet north of the southwest corner SE¼ Section 12-7n-11w. T. E. Kelly, Many, was granted a permit to drill McClanahan 1, 1000 feet south and 330 feet east of the northwest corner SW¼ NW¼ Section 36-8n-11w.

In St. Landry Parish, The Texas Company, Shreveport, was granted a permit to drill Thompson 1, approximately 2593 feet north and 477 feet east SWc Section 20-6s-5e.

In Terrebonne Parish, The Texas Company, Shreveport, was granted a permit to drill L. L. E. Lake Barre 8, 2765 feet south and 507 feet east NWc Section 30-21n-20e.

There is a size and shape of OSAGE "The Super Diamond Substitute" Metal for all jobs.

Texas and Louisiana Distributor:
WESSENDORFF NELMS & COMPANY
317 Preston Avenue
Houston, Texas

OSAGE

Eastern States and Export Agents:
THE FOOTE MINERALS COMPANY
1609 Summer Street
Philadelphia, Pa.

Manufactured by

OSAGE METAL CO., INC.
FORMERLY MID-CONTINENT METAL ALLOYS COMPANY
1900 N. EASTERN AVE. OKLAHOMA CITY, OKLA.

Complete Temperature Check of Zwolle Wells

Shreveport, La.—Dr. C. E. Van Orstrand, geophysicist United States Geological Survey, with headquarters in Washington, D. C., after spending approximately one month in the Zwolle field of Sabine Parish, last week completed his work of taking temperatures at various depths in 11 wells in that chalk rock field and returned to Washington.

Dr. Van Orstrand using three thermometers lowered them into the hole and took temperatures at the depth of 250 feet, at 500 feet and then every 500 feet to bottom. Average depths in Zwolle are about 2600 feet. However, if the curve did not appear justified he took readings every 250 feet as a check. Each of the three thermometers used had to check within .2 of a degree of each other for the readings to be recorded. The thermometers were allowed to set in the hole about one hour and 15 minutes.

Among the wells in which readings were taken was R. L. Gay, Trustee's Long-Bell Lumber Company A-1, NW NW Section 10-8-13, the deepest hole ever

sunk in North Louisiana, which is shut down at 7154 feet. However, Dr. Van Orstrand was able to take readings in this test only to 3800 feet due to heavy mud in the hole.

Dr. Van Orstrand was assisted in his work by R. E. Heitkecker of the Shreveport office of the United States Bureau of Mines.

Only One Producer In North Louisiana

Shreveport, La.—There were three completions last week in North Louisiana, all in the Zwolle field. Of the three only one was a commercial well, this being Service Drilling & Royalty Corporation's E. E. Smith 3, SE SW SW Section 7-7-10, in the extreme southeast part of the Zwolle east field, which is flowing 43 barrels of oil daily through two-inch tubing, at 2796 feet.

There were six new locations last week in North Louisiana and one location was abandoned. The latter was Gibson Oil Corporation's C. C. Lyon 1, center SW NE Section 34-23-14, Bossier Parish, Miller's Bluff district. This company recently completed a dry hole below 3100 feet and 100 feet below the horizon that showed for small production in several tests in that area. This company has a 7500-acre block in the vicinity.

In the Blanchard gas field of Caddo Parish, Louanna Oil & Gas Company, Incorporated, is rigging up for Winters 1, located 1880 feet north and 560 feet west SEc Section 4-18-16.

Converse

Gibson and Johnson, Incorporated, who drilled the first two shallow producing oil wells in the new Converse field of Sabine Parish, where there are now five commercial wells, made location for another test in that district last week, H. A. Pugh 1, located 990 feet north and west SEc Section 18-9-13.

In the northeast part of the Zwolle field, T. E. Kelly ran derrick pattern for McClanahan 1, located 1000 feet south and 330 feet east NW SW NW Section 36-8-11. In Section 36-8-12, Robertson Drilling Company's J. W. Hughes 1, located 1820 feet west of center of section was abandoned as a dry hole at depth of 2594 feet and the same operator is rigging up for J. W. Hughes 2, located 330 feet south and 660 feet west NEc SW NW Section 36-8-12.

United Gas Public Service Company made two locations in the Monroe gas field, one in Ouachita Parish and the other in Morehouse Parish. The latter is Crossett Lumber Company 30, located 1320 feet south and 2490 feet east NWc Section 25-22-4e, and the former is U. S. Government 2, located 1939 feet north and 769 feet east SWc Section 1-19-3e.

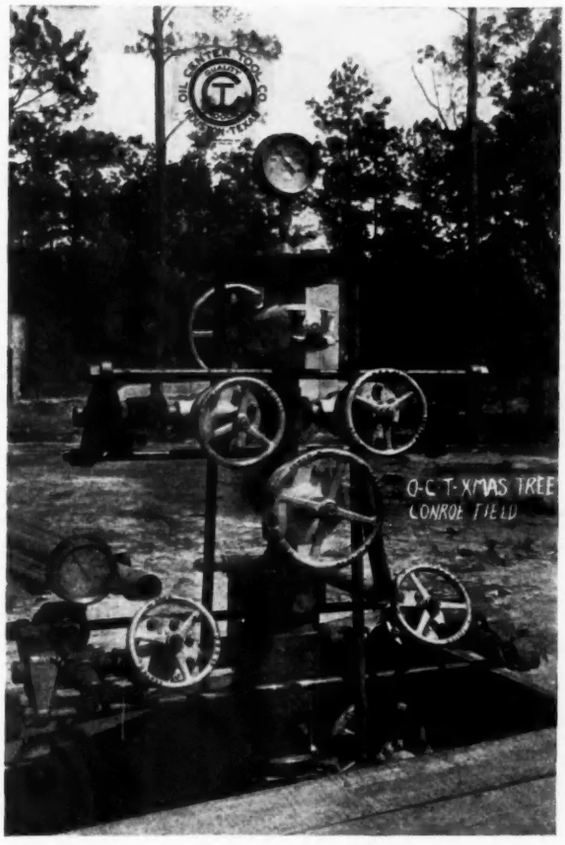
Completions in North Louisiana last week follow:

Company, Well and Location	Init. Prod. Bbls.	Depth
Sabine Parish (Zwolle)—		
Service Drilling & Royalty Corp., E. E. Smith 3, 7-7-10..	43	2796
Doyle et al, M. B. Russell 1, 23-8-12	sw	2613
Robertson Drilling Co., J. W. Hughes 1, 36-8-12	*	2594

*Failures; †Junked; ¶Million cu. ft. gas.

Small Output of Converse Delays Building of Line

Shreveport, La.—R. L. Gay, Trustee's Long Bell Lumber Company 3, Section 5-8-13, 2½ miles south of nearest production in the Converse field of Sabine Parish, which has four shallow producers, tested dry in a drill stem test last week from 1682 to 1731 feet in marl and chalk, and is drilling below 1800 feet. Gay, who is discovering operator of the Zwolle field, announces that he will drill this test to the oolitic



We've Called On You For 5 Years...

◆

NOW It's Your Time To Call On Us!

Make our Exhibit, Booths 403 and 504, your headquarters while at the Oil Show, Convention Hall, Houston, May 22-28.

Make yourself at home in our Exhibit . . . . Get better acquainted with the Executives and Field Representatives of OCT Products . . . . Accept their invitation to visit our Plant, where a new headquarters office has recently been opened. See OCT Assembled and Tested Christmas-Trees in our Display, then go through our Plant and see the thoroughness with which OCT Products are Manufactured and Inspected.

We Manufacture Everything for the Christmas-Tree But the Valves, and Furnish any Valves You Specify.

Sold by Leading Supply Stores Everywhere.

Oil Center Tool Company

HOUSTON, TEXAS, U.S.A.

lime of the Glen Rose, if production is not obtained above.

This well is 1¼ miles west and three fourths of a mile north of the same operator's Long Bell A1, NW NW Section 10-8-13, shut down at 7154 feet after setting a new depth record for North Louisiana. This deep test had a good oil show and looked as if it would be a commercial well in the oolitic lime logged at 4754 feet and at 4775 feet recored a saturated oil core but casing was dropped in the hole while being run. However, the well was deepened and no test made of the oolitic lime show. Present test, Long-Bell 3, is checking 150 feet structurally higher so far than A-1, giving Gay hopes of getting production in the oolitic lime of the Glen Rose.

Five miles due north of Gay's present active test and on the north edge of Converse, A. C. Scott et al's Burkett 1, NW SW Section 10-9-13, that tested four joints of oil and three joints of mud and oil in 30 minutes in a drill stem test in Annona chalk from 1806-1833 feet, had 6⅝-inch casing cemented at 1802 feet, and last week was trying to drill plug but were unable to get to bottom. However, some oil was appearing in the hole. Casing trouble was feared.

A composite of contact points of tests drilled in Converse over an area of four miles east and west and three miles north and south shows that the interval from base of Annona chalk to the hard limey chalk of the Austin series in that field is 870 feet, with less than five feet variation in any of the tests drilled, and the interval from that contact point to top of the Tokio is 130 feet with about the same small variable.

Immediate standardization of the shallow producers from the 1600 to 1900 foot level in the Saratoga and Annona chalk series now appears to be the wise move in Zwolle. The wells, even when they come in flowing soon fall off. This has caused the field to be left without a pipe line outlet despite the fact that there are four shallow producers there. However, their combined daily yield is only slightly over 100 barrels. Evans Brothers' Cranford 1, Section 20-9-13, completed at 1890 feet about one month ago as a 200-barrel flowing well, the largest in the field, has dropped to 32 barrels daily flowing through tubing and undoubtedly will be standardized. Joe Modisette's Frost Lumber Company 1, Section 20-9-13, completed making 60 to 75 barrels daily, is now flowing approximately 50 barrels daily and is the most consistent of the four wells. Gibson-Johnson and Higgins' Frost Lumber Company 1, Section 15-9-13, discovery well of the field, and Frost Lumber Company 2, Section 19-9-13, are each making from 15 to 20 barrels of oil daily.

Besides Gibson-Johnson, Incorporated's new location made last week, Dave McConnell et al are building derrick for Cranford 1, located 330 feet west and 464 feet north SEC NW SE Section 20-9-13, on a 40-acre tract. This test is in the center of a triangle of three of the four shallow producers of the field.

Status of other active tests in the Converse field follow: Chief Oil Company's Bowman-Hicks 1, NE NW Section 36-9-14, is drilling at 2060 feet. Mrs. Mamie S. Hammonds' Patrick Heirs 1, Section 1-9-13, is drilling chalk below 2070 feet and will go to the Washita, having missed production in the marl and chalk. Lambert et al's Edward's 1, SW NW Section 29-9-13, is drilling below 2900 feet, giving out no information but said to have had several interesting shows in the Woodbine. H. C. Lessenger's Bowman-Hicks 1, NW SW Section 13-9-13, is arranging to deepen at 2030 feet, to go to the Wa-

WELCOME

To Booths

303 & 402

at the

OIL SHOW

Where are displayed for demonstration at your convenience

CAMERON'S Newest Oil Well Specialties:

MP SERIES BLOWOUT PREVENTER
"Fluid Closing" . . ."Manual Opening"

TYPE MH BLOWOUT PREVENTER
Complete Safety in Setting a Well.

ABERCROMBIE-SHIMEK WEIGHT RECORDER
Minutely Accurate . . . Direct Reading.

CAMERON'S SELF-CENTERING PREVENTER RAMS
For guiding drill stem to perfect center before final pack-off of rams.

CAMERON'S RESETTING TUBING PLUG
For opening and closing bottom of tubing string from the derrick floor.

CAMERON IRON WORKS

Incorporated

Houston, Texas, U. S. A.

shita. Sabine Production Company's Whitney 1, SW SW Section 4-9-13, is drilling below 2300 feet.

The following is a resume of other active North Louisiana wildcats:

In Bienville Parish, Lacolo Oil Company's Beck 1, Section 3-18-8w, has spudded and cemented 10-inch surface casing at 120 feet.

In Caldwell Parish during the last week Terrell & Price's Louisiana Central Lumber Company 1, NW NE Section 18-11-3e, shut down at 1315 feet.

In Catahoula Parish, George Greer et al's Louisiana Central Lumber Company 1, Section 2-9n-6e, shut down at 880 feet.

In Claiborne Parish, Service Drilling & Royalty Corporation's (Haynesville Partnership), J. L. Garrett 1, located 220 feet south and east NW SW Section 24-23-8w, a 4700-foot test in the old Haynesville field, is rigging up. In the same parish, United Gas Public Service Company's Meadows 1, NE SE Section 13-21-5w, is arranging to lubricate a hung drill stem 170 feet off bottom with total depth of 5560 feet. The same company's Temple 1, Section 21-23-7w, is arranging to core below 4465 feet.

In DeSoto Parish, E. T. Oakes' Johnson 1, Section 30-13-15, continues to ream out, with total depth of 4701 feet. In the same parish, Jack Whitson's Sanders 2, SW SW Section 19-11-13, is drilling below 1783 feet.

In Morehouse Parish, H. G. Samson of Fort Worth is rigging up Barnes & Sullivan 1, NE SW Section 12-21-7e.

In Natchitoches Parish, Means Brothers of Houston, have taken over the block and test of the J. B. Oil Company, which spudded Hankins 1, Section 67-10-7w, and announce plans to drill this test to 3000 feet. It has been shut down since January at depth of 660 feet. This was on part of a 14,000-acre block secured by the late H. S. Gerson and later transferred to Gerson Oil Company. Gerson completed one small commercial gasser at the 500-foot level but other tests were failures. D. A. Hapeman & Company of Chicago have taken over the west half of the 14,000-acre Gerson block and plan early location for a 4500-foot test. DeSoto Brothers of Mansfield, Louisiana, will drill the test under contract. Robert Weaver et al of Jackson, Mississippi, also plan a test soon on part of the block west of Red River in Natchitoches Parish.

Langley et al are rigging up for Peavy-Wilson Lumber Company 1, NE NE Section 16-5n-9w, a wildcat in Sabine Parish.

Other wildcat tests in North Louisiana were inactive last week.

Miller County Well Being Recompleted

Texarkana, Arkansas.—Under direction of Charles Beasley, receiver for Baker & McMurray their Olivet 1, Section 4-16-26, direct south offset to the same operator's Beck 1, Section 33-15-26 that was completed last fall to start, a drilling campaign in Miller County, Arkansas, resulting in three other commercial oil wells being completed, last week was plugged back to 2923 feet from previous total depth of 2948 feet and will be drilled in during the coming week. The plugging back was done by Halliburton Oil Well Cementing Company. Previously the well had been plugged back six feet to prevent salt water coming in.

This was completed as a 300-barrel commercial well in what some thought was a different stratum from the discovery well. The well quickly ceased to flow but was standardized and recently ceased to produce at all.

There were no new locations in Arkansas last week. There was one completion, a wildcat failure in Union County. This was J. E. Beard's G. W. Dugal 1, located 660 feet south and east NWc SW Section 13-19-13, which was aban-

AQUAGEL

TROUBLE-PROOF COLLOIDAL DRILLING MUD

A specially prepared clay with a high concentration of gel type colloids. Prevents loss of circulation, caving, stuck drill pipe and casing. Reduces abrasion and seals off fissures and caves.

BAROID

EXTRA-HEAVY COLLOIDAL DRILLING MUD

A specially processed pulverized Barytes with a specific gravity almost twice that of clay. Controls oil, gas and water pressures in drilling. Stops caving; will not settle from the mud; prevents fluid loss.

STABILITE

CHEMICAL VISCOSITY REDUCER FOR DRILLING MUD

A liquid chemical compound for reducing the viscosity of drilling muds without destroying their wall-building properties. Frees gas from gas-cut muds. Quickly and easily added to the mud. Very economical.

LEMCO

VIBRATING ROTARY MUD SCREEN

Eliminates sand and cuttings from drilling mud. Motor or turbine driven types. Pays for itself many times over by economies effected. When weight material is being used in the mud, shows even greater economy by prolonging mud efficiency.

SERVICE

Experienced service men are available in all oil fields, without charge or obligation. We welcome an opportunity to help you with any of your Drilling Mud Problems, whether or not you purchase any of our products.

Are you on our mailing list for "Drilling Mud" . . . published monthly for users of drilling mud?

See our Exhibit at the Oil Equipment and Engineering Exposition, Houston, Texas, May 22 - 28.

BAROID SALES CO.

Los Angeles, California

NATIONAL PIGMENTS & CHEMICAL CO.

St. Louis, Missouri

Write for Literature and List of Distributors

doned as a dry hole at 3628 feet; elevation was 194 feet. This well logged top of the Midway at 1645 feet and top of the Arkadelphia at 2025 feet, checking high on those contacts.

Status of other active wildcats in Arkansas last week follow:

In Columbia County, C. W. and Rex Alworth are moving in rig at W. D. King 1, Section 16-17-20.

In Desha County T. J. O'Hare's Martin 1, NW SE Section 3-8s-1e, is waiting for surface casing at 140 feet.

In Jefferson County, Harrell et al's McGaughey 1, NW NW Section 22-7-10, has resumed and is coring below 1365 feet.

In Little River County, American Portland Cement Company's Fee 1, SW NE Section 21-12s-32, is coring below 2358 feet.

In Miller County, Captain E. Byrd is moving in rig for Westmoreland 1, NW SE NE Section 8-19-27. In the same county Fitzwater et al's Norsen 1, SE SW Section 34-16-26, is drilling below 2783 feet.

In Sevier County R. E. Collins et al's Craig 1, SE NE SE Section 15-10-29, is drilling hard gravel at 200 feet.

In Union County, Mrs. Mamie S. McCurry et al's Rowland 1, SW SW Section 9-19-11, is drilling below 2433 feet.

Completions last week in Arkansas follow:

Company, Well and Location	Init. Prod. Bbls.	Depth
J. E. Beard, G. W. Dugal 1, 13-19-13	*	3628

*Failures; †Junked; ¶Million cu. ft. gas.

Mississippi Deep Test Finally Gets Underway

Jackson, Miss. — One new location was made in Mississippi last week, this being another test "in the trend" and is the fifth to be made on acreage of Dantzler Lumber Company held by Gulf Refining Company. The new location is Dantzler Lumber Company 5, located 471 feet north and 530 feet east SWc Section 32-7s-6w, Jackson County.

The same company's Dantzler Lumber Company 4, located 1100 feet east and 300 feet south, NWC Section 32-5s-8w, Jackson County, recently spudded, cemented 10-inch casing at 296 feet and is drilling below 1300 feet. Gulf Refining Company also has a test drilling in Stone County, also "in the trend," this being Wilbe Lumber Company 1, located 1020 feet south and 300 feet west NEc Section 21-2s-10w, which had 10-inch surface pipe cemented at 182 feet and is now drilling below 300 feet.

In Covington County, Eastman-Gardiner et al's Bank of Seminary 1, NW NW Section 26-8n-15w, the long-heralded 7000-foot test, is drilling below 500 feet.

In George County, United Gas Public Service Company's Luce Packing Company 1, located SW SW Section 25-1s-6w, shut down at 2500 feet, resumed last week after being shut down while seismograph work was done in the vicinity, later resumed, made about 10 feet and shut down again pending arrival of new drilling line. It is reported that readings were taken at bottom of this hole while surface seismograph work was done nearby.

In Lamar County, Lamar County Oil Company's Scott 1, SW NE NE Section 18-2n-14w, has not been scouted since spudding. In Monroe County P. J. McAlpine's Charles Rye 1, SE SW Section 22-15s-17w, is reaming out hard sandstone at 2890 feet.

In Sunflower County, delta section, Mississippi Oil & Gas Exploration Company's Ricketts 1, SE SE NW Section 26-23n-4w, has spudded and is drilling below 500 feet. There were no completions in Mississippi last week.

Mississippi State Land Leases in Litigation

Jackson, Miss.—Leasing of state owned land in the Jackson gas field may be held up some time as a result of federal court litigation. Mrs. Ella Rawls Reeder, who leased 1300 acres of state land from the board of trustees of the Mississippi State Hospital for the Insane here in 1924 and drilled a test thereon, acting in the name of Oil Products Corporation of Arizona, has asked for an injunction to restrain the state mineral lease commission from leasing the hospital property.

This commission some time ago acting under authority of a legislative act, received proposals to develop this property but award of contract was delayed pending settlement of this litigation. Last week Federal Judge Holmes appointed Allen Bridgeworth of Yazoo City, to act as special master to hear the petition for the injunction, dismissal of which was asked in a motion by the lease commission having been denied. State courts have held that Mrs. Reeder's claim to the lease was void as the board of trustees of the asylum had no right to lease the land.

Alabama Test Re-Cemented For Another Test of Show

Mobile, Alabama.—H. H. Given, who reported a show of oil and gas at 1393 feet in Mrs. H. Brill 1, SW SW Section 10-6s-5e, Baldwin County, Ala-

10c OIL
15c BEER

An enterprising drug store in Shreveport, Louisiana, has made itself quite famous by offering to trade two bottles of beer for three barrels of oil. Perhaps this store has rendered a public service by pointing out an impossible situation. A product from which the sundry machinery of government derives a dollar and a half in taxes cannot long remain at 10c or any similar figure. We have served the Gulf Coast country through its Ups and Downs for too many years to be gravely concerned with a situation that can't last.

PELCO

PELICAN WELL TOOL & SUPPLY CO.
Lake Charles — Zwolle — Monroe — Kilgore
Willow Springs — Houston — Refugio
SHREVEPORT LOUISIANA

bama, later cemented 6⅝-inch casing at 1375 feet, and tested salt water, is re-cementing casing with 18 sacks of cement, the first cement job being blamed for appearance of the salt water in the test.

When this well is completed Givan plans to move the rig to a location in Section 30-1s-30w, Escambia County, Florida, where he has up a 60-foot derrick.

In Escambia County, Alabama, Escambia County Oil Company's State Line Lumber Company 1, NE NW SW Section 24-1n-10e, is setting surface casing at 350 feet.

In Lamar County, Alabama, P. J. McAlpine and DeSoto Oil & Gas Company are preparing to resume in Gardner 1, NW NW Section 22-15s-16w, at 3350 feet. A water well for use in drilling was completed last week.

Alabama had no completions last week.

Hiawatha Dome Deep Test Starts; May Go 8000 Feet

Denver, Colo. — The test of Sugar Loaf structure which is to be drilled by Mountain Fuel Supply Company (Ohio Oil Company), has been held up in starting by bad highway conditions resultant from recent storms. The well is the Hatch 1, NW SW Section 9-11n-101w, just south of the Wyoming-Colorado line, in Moffatt County. This test is to be carried to 5000 feet if necessary. The structure is west of Hiawatha dome.

The dep test on Hiawatha dome, which will explore horizons hitherto untouched in this field, has been spudded by Mountain Fuel Supply Company, and has set 20-inch casing at 108 feet. The well is Florence Wilson 2, NE NE Section 22-12n-100. Contract for a 7000-foot hole has been let to Rocky Mountain Drilling Company, and a total of 8000 feet will be drilled if necessary.

Interest in northeastern Colorado is centered on Continental Oil Company's Anthes 1, NE NE Section 24-8n-59w, Weld County. The test is in the Buckingham-New Raymer district and is now in the Dakota below 6637 feet. Indications for production are said to be encouraging, and all formations are being cored as the well drills ahead. In the Brighton-Lupton area, also in Weld County, a new operation which is getting under way is that to be drilled by W. H. Gill et al, Smith 1, SE SE Section 14-1n-66. The 8¼-inch casing has been set at 300 feet. This is a test to a sand in the top of the Foxhills at 800-900 feet.

On Lamar dome in Prowers County, Shastatex Oil & Gas Company's joint test with the Trojan Oil & Gas Company, NW NE NE Section 15-23s-46w, is waiting for pipe. It is shut down at 200 feet with bit in the hole.

On the Jefferson structure in Park County, South Park Oil Company is cleaning out to resume at 3020 feet in Milligan 1, SE Section 13-8s-76. South Park Oil & Gas Company is fishing for spear with total depth 2465 feet in Esche 1, Section 5-9s-76, on the Como structure.

New Mexico Wildcat Work Practically at Standstill

Santa Fe, N. M. — Norrins Realty Company has temporarily shut down at 4566 feet in Pajarito Grant 1, NE Section 22-9n-2e, Bernalillo County. The well is southwest of Albuquerque, and is bottomed in valley fill.

No activity is reported among the tests under way in Chaves County. The Warman Oil Trust's Weldon & Hoar 1, SE Section 9-14s-25e, is still standing bottomed at 855 feet. The L. B. Tannehill interests have a tentative location in Section 11-11s-26e, but no report of a definite plan concerning it has been made.

On the Indian Creek structure in Eddy County, R. Spearow and others' McClelland 1, SW NW NE Section 22-22s-23e, is drilling in lime below 2000 feet.

No progress is reported from wildcat wells in Guadalupe County. Anton Chico Development Company is last reported in the red beds at 1610 feet, Section 20-9n-17. New Mexico Producing & Refining Company is standing ready to resume with McMullen 1, Section 24-5n-16e, bottomed at 4770 feet.

Fred Barrett's Hart 1, on the Fulcher Basin structure in San Juan County, Section 11-29-12, is held up at 700 feet because of injuries suffered by the driller.

In Santa Fe County Kelsey Clients' No. 2, Section 22-10n-10e, Crowe Butte structure, is bottomed at 295 feet.

Western Natural Resources Corporation's San Clemente Grant 2, NE 5-6n-1e, is drilling in brown shale below 4475 feet.

WAREHOUSES

on the spot and up, ready to do business in a hurry.

Oil Field Supply Companies, manufacturers, and others needing stocks in new fields, quickly, should use Houston Ready Cut House Co. Sectional (Portable) Warehouses. We can supply them in frame or galvanized iron sectional.

They can be erected in 72 to 98 hours after arrival on building site. All stock warehouses can be shipped twenty-four hours after order is received.

Prices are in line with present conditions.

Cottages	*Valve Houses*	*Mess Halls*
Bunk Houses	*Out Houses*	*Warehouses*
Field Offices	*Summer Cottages*	*Garages*
Meter Houses	*Large Residences*	*Filling Stations*

HOUSTON READY-CUT HOUSE CO.

Successors to **CRAIN READY-CUT HOUSE CO.**
HOUSTON, TEXAS

Northeast Colorado Prospects *Aided by* Deep Drilling Advance

C. L. WAGNER[1] and F. L. SWINDELL[2]

THE possibilities for oil and gas production in Northeastern Colorado have been recognized for many years. It has only been within the past few years, however, that the area has received favorable attention. This has been due in part to nature of the surface beds, which many geologists claimed were not workable, and to limitations upon depth of drilling through lack of proper equipment. Perfection of drilling equipment and technique which now permits exploration to depths of 10,000 feet or greater bring the lower beds within easy reach and a considerable amount of development may be expected within the near future.

Discovery of oil in Platte Valley Petroleum Corporation's Patterson 1, Section 24-6n-61w, on what is now known as Greasewood Dome, in October, 1930, attracted attention of many geologists from both the Rocky Mountain and Mid-Continent areas. The drilling campaign which followed induced a rather widespread study of the entire northeastern portion of the state. In the spring and summer of 1931, C. L. Wagner, consulting geologist for Ramsey Petroleum Corporation, discovered and mapped a structure, the gently dipping limbs of which extend over a major portion of townships 7 and 8 north, ranges 58 and 59 west, eastern Weld County. The discovery well, Ramsey Petroleum Corporation's St. Anthony (Tighe) 1, SW NE SE Section 15-7n-59w, is 13 miles northeast of Greasewood Dome, the nearest production, and 3½ miles south and a half mile east of the town of Buckingham, a station on the Sterling-Cheyenne branch of the C.B.&Q. Railroad.

Topography and Drainage

Topography of the Buckingham-New Rymer area in general is of the rolling type usually found in the high plains. The surface soil is predominantly sand, derived in the main from the lower sandy members of the Laramie formation. The structure is located on a topographic high from which the drainage flows to the south and southwest and to the east and northeast. The average elevation is slightly less than 5000 feet. A tributary of Wildcat Creek has formed a rather steep sided coulee which crosses the south end of the structure. None of the other streams in the area have developed valleys of consequence.

Aerial Geology

To the west of the structure, as indicated on the accompanying map, the Laramie formation covers the surface over a broad area roughly triangular in shape and wedging southeastward into Fox Hills formation along the western edge of the structure. To the north, gently dipping beds of the White River formation of Tertiary age unconformably overlie the Laramie and Fox Hills formations. There are sufficient breaks or exposures to the north to determine extent of the structure in that direction. The Fox Hills formation covers the crest of the structure with the exception of three White River outliers in 7n-59w. It will be observed that beds of the Fox Hills formation occupy a position on the surface higher than the adjacent Laramie formation which is stratigraphically higher in the section. As these formations cover a considerable area in this relationship a large gently sloping anticline is indicated. The Laramie and Fox Hills formation both contain reliable markers which can be carried for many miles. These formations also contain many fossiliferous beds which may be used as a key to structure.

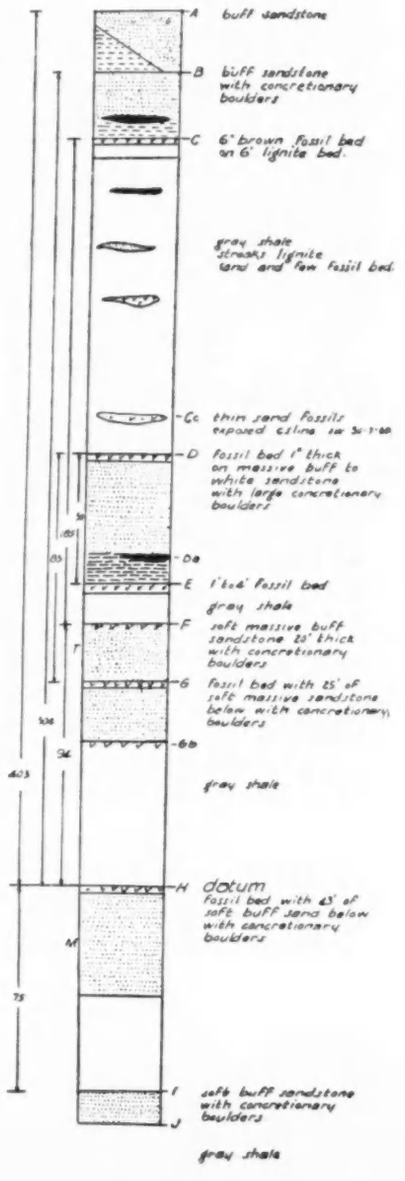
Stratigraphy

The stratigraphic section, as revealed by drilling, is as follows: The restricted Fox Hills formation occupies about 300 feet, consisting mainly of fine sandstones and silty shales. The Lewis member of the Pierre shales, underlying the Fox Hills, has a thickness of 2500 feet and contains in its upper half many sandy zones consisting of interbedded sands, sandy shales and silts. The lower half is mainly silty shales. The Hygene member of the Pierre, which includes the Rocky Ridge sandstone (?) has a thickness of 1850 feet. The Rocky Ridge (?) sandstone is a medium fine grained subangular quartz sand with many heavy minerals and glauconite. This member has the coarsest materials encountered in the entire section and is the only marker which may be identified with confidence between the Laramie and the base of the Niobrara. The lower Pierre and the Niobrara formations, having a combined thickness of 1600 feet, are difficult if not impossible to separate. The basal member of the Niobrara, the Ft. Hays or Timpas limestone, has been assigned a thickness of 98 feet, although this is greatly in excess of the section heretofore drilled in the area. The Benton formation, including the Patterson sand, has a thickness of 489 feet, top of the Patterson being 418 feet below top of the formation. The Patterson or Muddy is a fine grained quartz sand. Some difference of opinion exists as to whether this member should be correlated as upper Dakota or basal Benton.

Structure and Structural Relationships

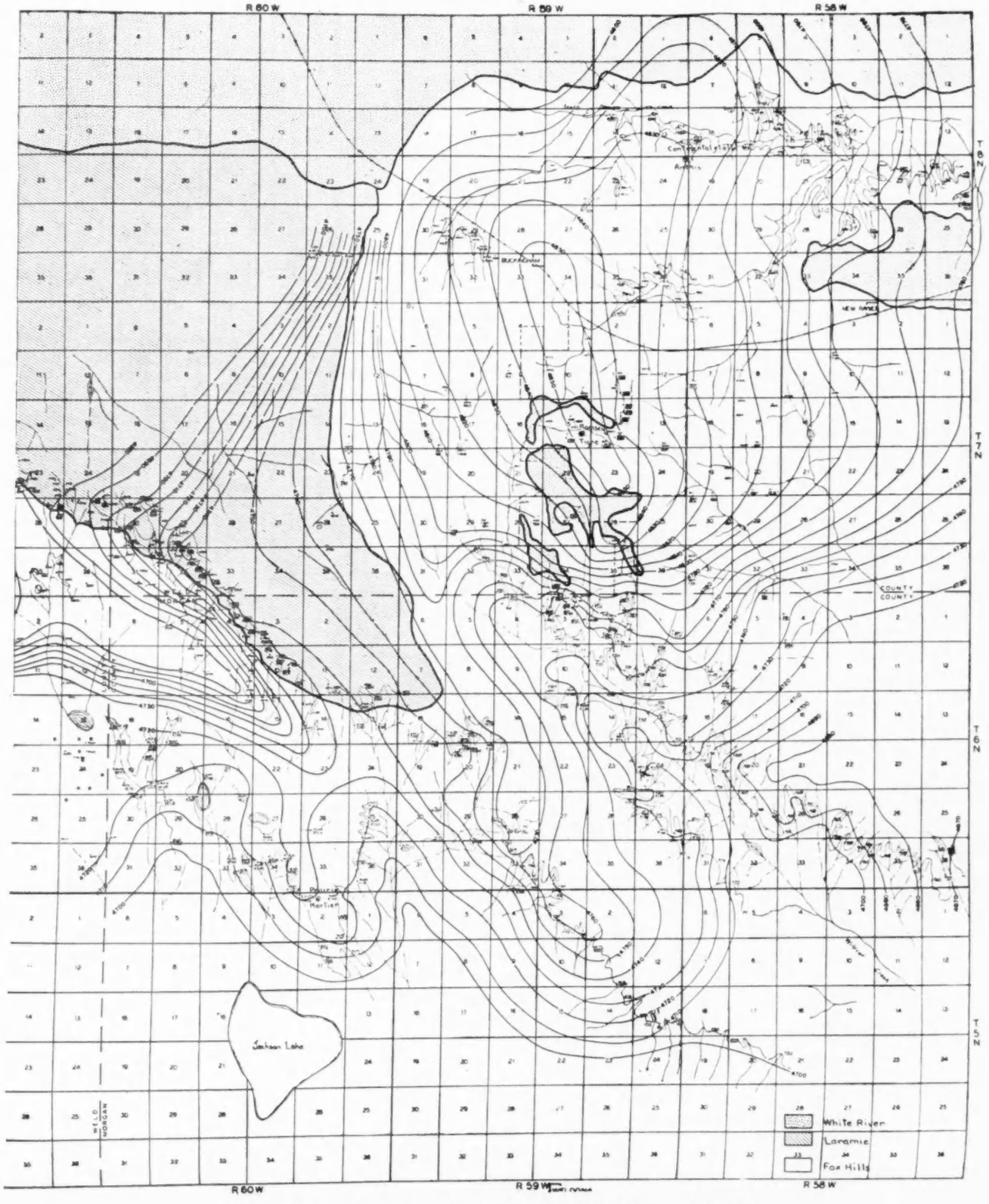
The Buckingham-New Rymer structure is a gently dipping oblong dome

GEOLOGIC SECTION OF CRETACEOUS FORMATIONS EXPOSED IN AREA

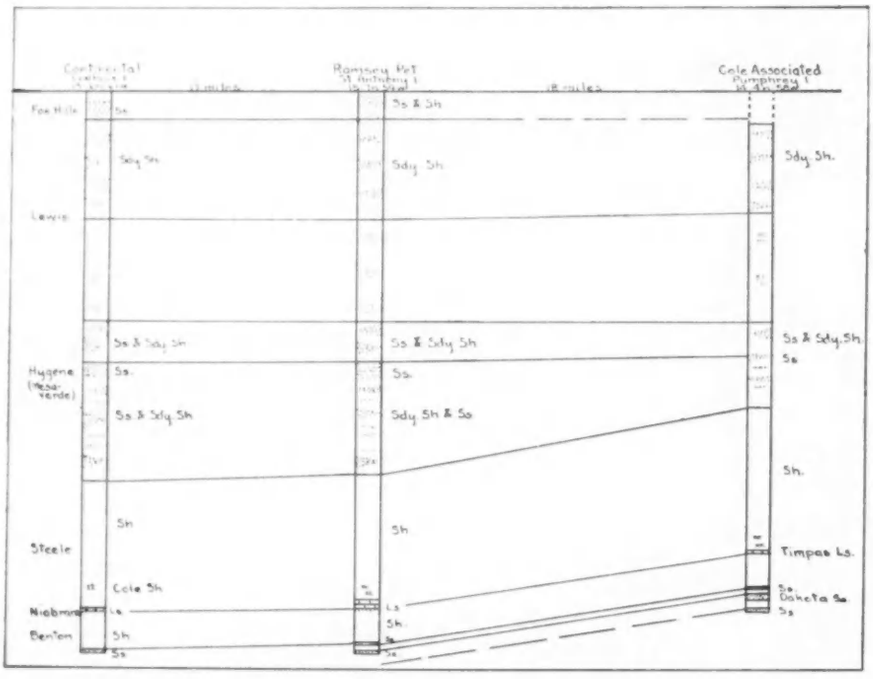

A buff sandstone
B buff sandstone with concretionary boulders
C 6" brown fossil bed on 6' lignite bed.
gray shale streaks lignite and few fossil bed
Cc thin sand fossils
D fossil bed 1" thick on massive buff to white sandstone with large concretionary boulders
Dd
E 1'bed fossil bed
gray shale
F soft massive buff sandstone 20' thick with concretionary boulders
G fossil bed with 25' of soft massive sandstone below with concretionary boulders
Gb
gray shale
H datum
fossil bed with 45' of soft buff sand below with concretionary boulders
I soft buff sandstone with concretionary boulders
J
gray shale

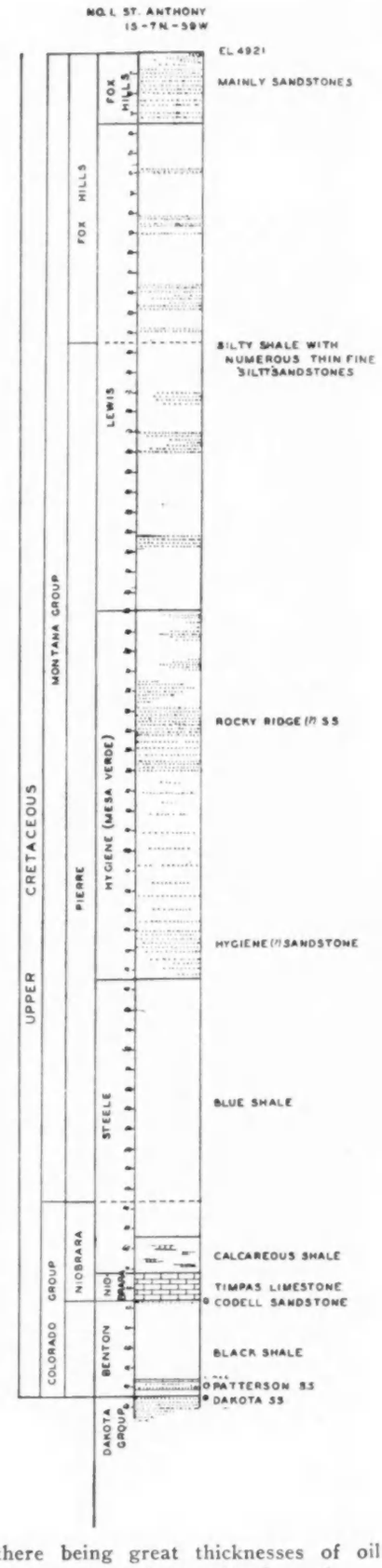
[1]Consulting geologist, Ramsey Petroleum Corporation. [2]Staff representative.

or anticline striking approximately north 20 degrees west and having its crest in Sections 3, 10, 15, and 23-7n-59w, and Sections 33 and 34-8n-59w. Compared to wells on Greasewood Dome the Ramsey, St. Anthony well is 120 feet structurally higher at the surface and 220 feet higher on all beds from the Timpas limestone downward to the Dakota sandstone. Comparison of the two sections shows no thinning of beds and only 34 feet of convergence which takes place between the Hygene member of the Pierre shale and the Timpas limestone. No convergence is noted between the Fox Hills formation and the Hygene sand. Comparison of Greasewood Dome wells with the old Prairie Oil & Gas Company's Mortier 1, Section 2-5n-60w, a distance of slightly over 5½ miles, shows a south-



Map of Buckingham-New Rymer District, Northeastern Colorado





Cross Section of Buckingham-New Rymer area, and at right, log of St. Anthony 1. (Drawings by C. H. Rankin, Continental Oil Company.)

east convergence of 16 feet per mile. Here again the convergence is restricted to the interval between the Hygene sand and Timpas limestone.

Producing Horizons

In the Ramsey Petroleum Corporation's St. Anthony (Tighe) 1, two producing horizons have been encountered. The first, the Patterson or Muddy sand from 6687 to 6692 feet, yielded approximately 6,000,000 cubic feet of gas, volume showing no decline after the well had been allowed to flow open five days. Analysis of the gas showed about 2.5 gallons of natural gasoline per 1000 cubic feet. The rock pressure, as determined after the well had been shut in 14 hours was over 1700 pounds per square inch.

The second producing horizon, or Dakota sand, was encountered at 6758 feet. The Dakota is very similar in appearance to the Muddy but has a higher porosity. Nature of the upper portion of the sand is indefinite due to the fact that in the first three feet cored no recovery was obtained. The second core showed a highly saturated oil sand. Five-inch casing was run at this point, perforated at the Muddy sand and at the bottom of the string. As near as could be determined the pipe was set five feet below top of the Dakota. After being bailed down to 3500 feet the well cleaned itself and flowed about 130 barrels of fluid, half of which was water. The well was then standardized and drilled 33 feet deeper without samples being obtained. Water increased daily but drilling was not obstructed due to inability to run the bailer. The gas flow apparently did not diminish with the increase of water. Source of the water was not definitely determined, analyses indicating that it is not typical Dakota sand water. Operators also were unable to determine whether or not additional gas production was encountered in the lower 33 feet of the formation. The well has been plugged back to Muddy sand.

Possibilities for Deeper Production

At present the Dakota sandstone has not been thoroughly tested. Based on a general study of the section this sand should be at least 150 feet thick. At the outcrop in the foothills west of Fort Collins, the Muddy sand has a thickness of 35 feet and is separated from the main body of the Dakota by an interval of 200 feet of black shale. At Greasewood Dome it has a thickness of 36 feet while the underlying black shale is reduced to a thickness of 58 feet. On the Buckingham structure the black shale interval has been reduced to a thickness of about 42 feet. At least two and possible three horizons below the Dakota offer possibilities for oil and gas production in the Buckingham-New Rymer area. The Lakota sandstone, should be encountered at about 220 feet below top of the Dakota. If no faulting of great magnitude is found in the Buckingham structure the Lakota sandstone should be the true reservoir for oil and gas, there being great thicknesses of oil bearing shales below this formation.

The next possibility for oil and gas production should be in the Sundance sand at the base of the Morrison group of Commanchean age. Little is known of the section below the Lakota sand-

stone. Both of these formations produce in the fields of Wyoming and should be present in their normal sequence in northeastern Colorado. Paleozoic production may be found in the area but these horizons should not be encountered at depths less than 8000 to 10,000 feet.

Present Development

The Tulsa-Fort Morgan, Anthes 1, NE NE, Section 24-8n-59w located six miles northeast of the Ramsey well, is being deepened to test the Muddy and Dakota horizons after being shut down for several months at 3318 feet in the Hygene member of the Pierre shale. Operation of the test has been taken over by a group composed of Continental Oil Company, The California Company and Centennial Plains Oil Company. The Ramsey interest will drill at least two additional tests, one of which has been tentatively located in Section 4-7n-59w, less than two miles northwest of St. Anthony 1.

Report Places Proposed Test Northeast Wyoming

Casper, Wyo.—It is reported here on good authority that local men are considering a test on what is known as the Rocky Point structure in the northeastern part of the state. A prominent Denver geologist is said to be making a survey of the structure this week and if his approval is forthcoming the well will be drilled.

The wildcat test of S. Marvin James & Company on the Riverside ranch structure in Albany County, southern Wyoming, is drilling around 700 feet after having set 504 feet of 8¼-inch casing. The well is Hindry 1, SW SW Section 10-13n-76w.

On the Overland, or Pass Creek, structure in Carbon County, southern Wyoming, the Earl W. Reader, Inc., test, SW SW Section 10-20-83, is last reported to be drilling below 500 feet. This well has the Dakota sand mapped at 3400 feet. It is 21 miles east and south of the City of Rawlins.

It has been impossible to reach the location of the Leo B. Murphy interests on Platte River dome, west of Casper, Natrona County, because of continued storms and bad roads. The test is on SE NW Section 29-33n-80w, and is bottomed at 840 feet with the 8¼-inch casing set.

The test being drilled on the North Boone dome structure by Triangle Oil Company, Section 29-36n-85w, Natrona County, is reported to be drilling around 400 feet.

Ohio Oil Company has spudded A. J.

F. G. MASQUELETTE & COMPANY

Certified Public Accountants

APPRAISALS AND TAXATION
ESTIMATION AND VALUATION OF RESERVES
DEPLETION
COMPLETE SYSTEMS FOR OIL COMPANIES

FEDERAL TAX SERVICE

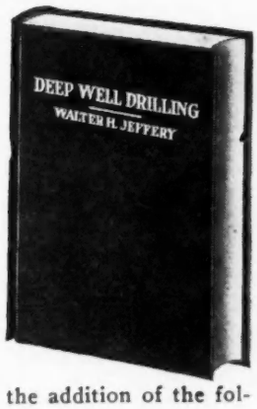
COTTON EXCHANGE BUILDING
HOUSTON, TEXAS

FIRST NATIONAL BUILDING
EL PASO, TEXAS

THIRD EDITION of the Well Known Book . . .

DEEP WELL DRILLING

by **WALTER H. JEFFERY**



Re-written and revised to date, and enlarged by the addition of the following New Chapters:

Geophysical Prospecting and Air Mapping.
Straight Hole Drilling and the Treatment of Crooked Holes.
Water Supply.
The Gas-Air Lift Method of Producing Oil.
A. P. I. Codes.

Preparatory to writing the new book, the author spent weeks in a first hand study of modern methods of drilling by the rotary system, and of completing wells, controlling high pressures and operating wells in the deep fields of California and Oklahoma.

The third edition contains 816 pages, 150 pages more than the second edition, and 452 illustrations, but the price is the same, $6.00.

SEND CHECK TO

GULF PUBLISHING COMPANY

3301 BUFFALO DRIVE **HOUSTON, TEXAS**

Hazlett 1, SW Section 34-23-79, in the Allen Lake district, near the town of Medicine Bow. This well will be drilled for the purpose of developing an auxiliary supply of natural gas for the City of Laramie. If it fails to do this, it will be drilled into the lower sands with the idea of developing oil production.

Jack Creek Structure Test Reports Oil Show

Helena, Mont.—The Rice-Fulton Development Company's wildcat well on the Devil's Hole structure, No. 1 on C W½ SE Section 20-2n-23e, Yellowstone County, is drilling now at 3790 feet with the Dakota series as the next objective.

Oil showings are reported by the Jack Creek Oil Company in the No. 2, NE NW SE Section 15-7s-23e, on the Jack Creek structure, east of the Dry Creek field, in southern Carbon County. Last reported total depth at this well was around 1300 feet.

Fuel is being moved in to the Lodge Grass structure where the Enterprise Oil Company is to start work deepening Lynde 2, drilled to 3450 feet some years ago by Ember Drilling Company. Dakota sand is the objective.

A new derrick has been ordered by Montana Gas & Petroleum Company for another test to be drilled on the Three Forks structure in Gallatin County. The company's No. 1 well on SE SE SE Section 35-2n-1e, is bottomed around 1750 feet.

Preparations are going forward by Golden Valley Oil Company to resume drilling at its test on Belmont dome, SW SE SE Section 28-6n-22e, in Golden Valley County. The well has been standing bottomed at 3570 feet since last November when the rig was destroyed by fire.

Oregon - Flatwillow Development Company is reported to be drilling around 1300 feet in No. 1, SE SE SE Section 3-13-26e, on the Flatwillow structure in Petroleum County.

In Broadwater County, Capitol Oil & Gas Company is reported to have abandoned its test on SE NW Section 7-8n-1e. Total depth was 2002 feet.

W. M. Fulton's test on the Blackfeet Indian reservation, south and west of the proven part of the Cut Bank field, Haggerty 1, NE Section 16-34n-6w, is running 10-inch casing at 2100 feet. North of the field several miles, P. T. Sweeney's Lee Jacobson 1, NW NW Section 23-37-5w, is drilling below 2530 feet.

Second Test Started on Blackfeet Indian Lands

Cut Bank, Mont.—A new well was spudded in last week in the Cut Bank field, in Glacier County. It is Santa Rita Oil & Gas Company's Blackfeet 2, C SW NE Section 15-34-6w, a quarter mile west of the recently completed Blackfeet 1, on the Blackfeet Indian reservation. Tubing and rods were run in the No. 1 well, center SE NW Section 15-34-6w, and it is now on the pump. It swabbed 124 barrels per day before it started pumping, after it had been shot with 80 quarts. The oil is 40 gravity, free from sulphur, has a paraffin base, and comes from a 60-foot sand which is 50 per cent saturated. There is no water showing with the oil.

Completion of another well on the Blackfeet Indian land has created considerable excitement among the Indians, and it is said that all of the Piegan nations in northern Montana, including the Blood and Blackfeet, are to assemble soon for a great celebration which will commemorate the discovery of oil on Indian lands.

Another well on the reservation, located south and west of the proved field, got under way last week when the W. M. Fulton Haggerty 1, northwest corner of Section 16-34-6w, started to run the 10-inch casing for which it has been waiting for the last several weeks. The well is bottomed at 2100 feet and the casing, it is understood, is to be run and then carried to 2200 feet where it will be cemented.

In the eastern limits of the field the Roy Tarrant interests' Miller 1, CNE NE Section 24-34-6w, is a near completion which is of particular interest because of its location. Commercial production here will indicate what may be expected in this part of the field. The well is running eight-inch production string at 2740 feet in the top of the Stewart sand. It should be drilling in.

Santa Rita Oil Company's Simms-Jackson 1, Section 25-34-6w, which was given a 200-quart shot of nitroglycerin recently, pumped 120 barrels initial after having been cleaned out. It is estimated that it will settle to 60 to 75 barrels per day. This test was the experimental one used in the field to test the efficacy of large shots in the producing sand. The same operators are drilling below 820 feet in Olson 1, northeast corner of NE NE Section 26-34-6w.

South Baxter Basin Test May Go to 6500 Feet

Rock Springs, Wyo.—The Wyoming-California Petroleum Company, subsidiary of Associated Oil Company, has resumed its test on the South Baxter Basin structure in southwestern Wyoming. The hole has been bottomed at 4106 feet during the winter, with the 8¼-inch casing cemented. Sundance sand is the next objective, and if production is not developed here the test will be carried to the Tensleep, mapped around 6500 feet.

A near completion in the South Bax-

PAY US A VISIT and get acquainted with these Diamond Metal men:

W. T. TOUCHTON, President

WALTER McCAINE, Plant Manager

B. J. ROSS, Gulf Coast Sales Representative

O. H. SIMS, Southwest Texas Sales Representative

♦

BOOTHS 516 and 518
at the
OIL SHOW

Present the story of DIAMOND METAL, the hardest and toughest Diamond substitute on the market.

Makes bits drill longer . . . fewer round trips.

♦

DIAMOND METAL COMPANY

3411-13 HARRISBURG BLVD.

Telephone Capitol 1888

HOUSTON ♦ TEXAS

ter Basin district, is reported by the Mountain Fuel Supply Company in Mullen 2, Section 2-17-104. The hole is gassing from the top of the Frontier at 1792 feet. It is cased with 10¾-inch casing. If the Frontier is not commercially productive the test will be drilled deeper.

Michigan Permits Show 100 Per Cent Increase

Mt. Pleasant, Mich.—Three permits to drill were issued in Michigan this week bringing the year's total to 90 as compared to 45 for the same period in 1932. All of the permits this week are for locations in the new Porter township, Midland County, area, the center of present development. They follow:

C. W. Teater's Wale 1, NE NE NW; Fred W. Turner's Baxter 1, NW NE NE; and Stork Oil Company's Richmond 2, SE NW SW; all Section 22, Porter township, Midland County.

Eight Michigan Wildcats Important Geologically

Mt. Pleasant, Mich.—Eight wildcat tests in widely separated outpost districts of Michigan proven fields promise to throw considerable light on geology of different regions and have potentialities of uncovering new oil productive areas in the state.

In Isabella County, Michigan Gas & Oil Company is spudding in on Busche 1, Wise township, C SW SW Section 10, a location six miles northeast of the Vernon (Isabella County) oil and gas field. Eight miles west and a mile north of the Busche test, Strang & Flynn are spudding in the Currie 1, Vernon township, SE SW SE Section 5.

Old Dutch Oil & Gas Company is driving pipe at 250 feet on the Hallock 1, Oceana County, Perry township, SE NE NW Section 6, and in the same county, H. F. Friesner's Werich 1, Ferry township, Section 6, NE NE, is spudding in. These two tests promise to prove up several hundred acres in Oceana County where tests in Elbridge & Hart townships have opened up commercial oil stratas in the Traverse formation.

Pure Oil Company is straight reaming in the Traverse on Mills Estate 1, Ogemaw County, Mills township, Section 36, and expect to continue drilling ahead by next week. The test made a good show of gas from the Bera formation. It will be deepened from the Traverse into the Dundee lime.

In Newago County, Newago Oil & Gas Company's Bates 1, Sherman township, Section 12, is drilling below 6300 feet in Utica Shale, the only deep hole test now active in the state.

O. A. Daniel's Morrice 1, Shiawasee County, Perry township, Section 3, NW NW, is driving pipe at 200 feet.

New rig has been erected and equipment placed on Livingston Oil & Gas Company's Zebb 1, Livingston County, Genoa township, and drilling will be resumed this week after a delay of several weeks resulting from a fire. The test is below 3400 feet and is showing gas.

Columbia Oil & Gas Company is ready to spud in on Travis 1, Midland County, Greendale township, Section 32, after skidding from first hole that was abandoned at 1385 feet with a bad fishing job.

Otis Denslow's Cook 1, wildcat gas test, Isabella County, Broomfield township, Section 2, has been skidded from first hole lost at 250 feet, and will be respudded this week.

Four Commercial Wells In Porter Township Pool

Mt. Pleasant, Mich.—The new Porter township (Midland County) oil pool continues to be the center of Michigan development with four commercial wells completed this week, one a semi-wildcat indicating a 1¾-mile extension, and 13 tests drilling.

Gordon Oil Company's Muscott 1, Porter township SE NW NE Section 17, was completed for 180 barrels initial at 3426 feet. This test is located 1¾ miles northwest of the Teater-Otway discovery well of the field in Section 22.

It is about the same distance due west of the Pure Oil Company's State-Porter well in Section 15, same township, completed in April with an estimated initial of 5000 barrels.

Success of the Gordon Oil Company test indicates a wide area of productive acreage yet undeveloped in the Porter district. The well is producing from Dundee lime and may be deepened for a second pay of the formation, which in other Porter township development has proven more prolific but hazardous because of the proximity of the water level.

Three other Porter township tests, all in Section 22, were completed in first pays of the Dundee lime with an average production per well of 120 barrels per day. This week's completion brought the total number in the Porter pool to 14 against no failures since February this year.

Acid solvent was run in Goll-Graves-Mechlings' Otway 1, Porter township, Section 22, NW SE SW, and increased production from 50 barrels a day to 250 barrels.

Completions of the week follow:

Company, Well and Location	Init. Prod. Bbls.	Depth
Midland County—		
Gordon Oil Co., Muscott 1, Porter Twp., se nw ne, Sec. 17	180	3426
Ed. Stewart, Richmond 1, Porter Twp., se se nw, Sec. 22	125	3425
C. W. Teater, Otway 1, Porter Twp., ne ne sw, Sec. 22	115	3435
C. F. White, Otway 1, Porter Twp., ne se sw, Sec. 22	120	3422

*Failures; †Junked; ¶Million cu. ft. gas.

Gott WATER CANS & COOLERS
Pure... clear drinking water
When you have a GOTT Water Cooler handy, you will always be assured of a fresh supply of pure drinking water kept delightfully cool. Order one from your supply store . . . now!
Gott
WATER COOLER
GOTT Water Cans 1 gal, 3 gal, 5 gal, and 10 gal.
GOTT Water Coolers 3 gal, 5 gal, 8 gal, 10 gal, and 20 gal.
Gottkool
H. P. GOTT MFG. CO., Winfield, Kansas
KEEP PURE DRINKING WATER ALWAYS HANDY

NU-ALLOY
Balls and Seats
on exhibit in
BOOTHS 222 and 224
at the OIL SHOW
Convention Hall - Houston
May 22 to 28
PETROLEUM EQUIPMENT CO.
NU-ALLOY BALLS & SEATS
FORT WORTH, TEXAS

Engineering Service Corp.
CONSULTING ENGINEERS
Specializing in Gulf Coast Problems, Pipe Lines, Terminals, Harbors, Docks
Surveys, Design, Reports, Inspection
924 SHELL BUILDING
Capitol 2191 Houston, U. S. A.

HIRSCH, SUSMAN AND WESTHEIMER
ATTORNEYS AT LAW
32nd Floor Gulf Building
Houston, Texas
Specializing in Oil Law and Land Law

PATENTS
JESSE R. STONE
and LESTER B. CLARK
Patents, Infringement Litigation, Trade Marks
Associated with
Andrews, Streetman, Logue & Mobley
2200 Gulf Bldg. Houston, Texas
Capitol 7245

PATENTS
Patents, Trade Marks, Copyrights and Infringement Litigation.
HARDWAY & CATHEY
428-29-30 Bankers Mortgage Bldg.
Phone Fairfax 8232 Houston, Texas

THE FORT WORTH LABORATORIES
Field Gas Testing. Analysis of oil field brines, gas minerals and oil. Sell Thermometers, Hydrometers and Laboratory Glassware.
F. B. Porter, B. S., Ch. E., Pres.
R. H. Fash, B. S., Vice-President
828½ Monroe St., Ft. Worth, Tex.

Michigan Geology Society Plans Two-Day Field Trip

Lansing, Mich. — Interested nonmembers have been invited to join the third annual spring field excursion of the Michigan Academy of Science, Section of Geology and Mineralogy, Saturday and Sunday, May 27 and 28. Start will be from Michigan State College Union Building, East Lansing, at 8:30 a.m., May 27.

On the first day details of the Saginaw and Woodville formations (Pennsylvanian) of the Grand Ledge area will be observed, together with problems of correlation dealing particularly with the hypothesis of cyclical sedimentation as applied to Michigan coal measures. The second day will be to visit exposures of the Grand River below Grand Ledge and exposures near Iona. The party will return for dinner Saturday evening at the Union Building, followed by illustrated lectures on the points visited.

Arrangements, including transportation for those who do not have their own cars, is under direction of a committee composed of W. A. Kelley, chairman, Frank Leverett, G. M. Ehlers and R. B. Newcombe. Reservations are being made through W. A. Thomas, divisional geologist, The Pure Oil Company, Saginaw, Michigan, who is chairman of the section.

27 Completions in Eastern States Fields

Cleveland, Ohio.—With fields of Kentucky, New York, Ohio and Pennsylvania reporting completions, field results for Eastern States district showed 27 finished operations during the week. Of these, 14 completions were in Pennsylvania; six in Ohio; two in New York, and five in Kentucky.

Initial oil production coming from 18 producers amounted to 129 barrels, most of which was represented by 12 producers in Pennsylvania.

A list of the week's completions follows:

Pennsylvania

Company, Well and Location	Init. Prod. Bbls.	Depth
Bradford Field—		
Minard Run Oil Co., Morris 38	3	....
Morris 39	3	....
Bradford Producing, Inc., Fee 34	32	....
Fee 35	pressure	....
South Penn Oil Co., Farm 4148, tr. (4 wells)	pressure	....
Farm 4119, tr. (1 well)	pressure	....
Farm 4294, tr. 1	2	....
Dallas Oil Co., Fee 106	3	....
Olean Petroleum Co., Fee 26	10	....
T. P. Thompson, Jr., Thompson 30	3	....
Towne-Melvin Oil Co., Smedley 7	6	....
Sloan-Zook Oil Co., Duke 1	3	....
Clarion-Venango Counties—		
Surety Oil Co., Staub 26	2	....
R. & G. Foggan, Clark 43	2	....
Butler County—		
Robinson & Collins, Collins 1	2	....
New York-Penn Gas Field—		
Great Northern Gas Co., Parish 1	¶	....
Peterman & Co., Skuse 1	*	....
New York		
Allegany County—		
Olean Security Co., Fee 1	2	....
H. V. V. Franchot, Trustee, Herrick 1	8	....
F. J. Eisert, Hamlin 1	pressure	....
Southeastern Ohio		
Monroe County—		
Valentine Oil & Gas Co., Gibson 2	¶	1070
Noble County—		
Ohio Fuel Gas Co., Pekarie 1	¶	1874
Central Ohio		
Ashland County—		
Eddy & Co., Gardner 4	*	250
Belmont County—		
Ohio Fuel Gas Co., Bright 2	¶	....
Stark County—		
Pfeiffer & Co., Immel 1	¶	4396
East Ohio Gas Co., E. A. Frank 1	¶	4452
Kentucky		
Daviess County—		
A. D. Schaffer, Bristow 1	2	....
Hupp & Duff, Wright 4	25	....
Ellis & Ashby, Ramsey Bros. 6	17	842
Ohio County—		
George Syewart & Co., Dunn 1	4	....
H. L. Ogle & Co., Perry 1	*	725

*Failures; †Junked; ¶Million cu. ft. gas.

MAP of Gulf Coast Country

A map of the Gulf Coast Country showing oil fields, salt dome prospects, and showing pipe lines and highways, in the territory from the Mississippi River down to the Rio Grande, may be had for $1.00 per copy. **$1.00**

This is a two-color map, 22 x 44.

Address: **The OIL WEEKLY, P. O. Box 2811, Houston, Texas,**

New Operation Started In Frannie Field

Frannie, Wyo.—A new operation in the Frannie field, northern Wyoming, will be conducted by Wyoming Petroleum Corporation which has material on the ground for Kirk 1, SW NW NE Section 25-58-98. The new location is between two producers on the Arnold-Mau land.

At a hearing held in federal court in Cheyenne last week, title to holdings in the Frannie field was settled in that suit brought by Charles A. Mau against the E. H. Rosenberg interests. Summit Oil Company and V. M. Kirk were also interested. The court refused to set aside contracts of the Mau group with Rosenberg and to re-form the contracts as requested in the plaintiff's petition. The leases involved are operated by Continetal Oil Company and Stanolind Oil & Gas Company.

Cleaning Out Dry Creek Wells to Put on Production

Red Lodge, Mont.—Ohio Oil Company is standardizing Souders 9, Section 2-7s-21e, in the Dry Creek field, southern Montana. Hole is bottomed on top of Lakota formation at 5471 feet.

In the same field, Carbon Oil & Gas Company is preparing to clean out its two completed producers and put them on production. It is reported that one of the independent refineries in Billings has contracted for the production. Joe Cook of Denver is in the field in the interests of Carbon Oil & Gas Company.

Poison Spider Producer Making 35 Barrels Daily

Casper, Wyo.—Completion is reported by Bessemer Oil Company of Bessemer 7, NW Section 18-33-92, in the Poison Spider field west of here. The sand was topped at 1320 feet and the hole drilled to a total depth of 1428 feet. The well is good for 35 barrels per day. The company plans to drill another test later in the summer.

Casper, Wyo.—Mutual Oil Syndicate's core drilling test on the Midway dome, 12 miles north of Casper, NE Section 23-35n-79w, is drilling below 2350 feet, believed nearing the top of the Shannon sand. This test is expecting to develop gas in that horizon.

Riverton, Wyo.—The Texas Company is testing the Morrison sand at 4911 feet in State-Ridgway 2, SW SW Section 36-34n-95w, at Alkali Butte in Fremont County.

Every Gasket at your Elbow

Gaskets for slush pumps, water pumps, Diesel engines, compressors, and for all Oil, Gas, Water, and Air connections are immediately available if you keep on hand a few yards of Vellumoid.

Cut or tap out gaskets as you need them. No trouble, no waiting, and every Vellumoid gasket is a quality product which you know you can absolutely rely on.

On without shellac, you can use Vellumoid gaskets again and again.

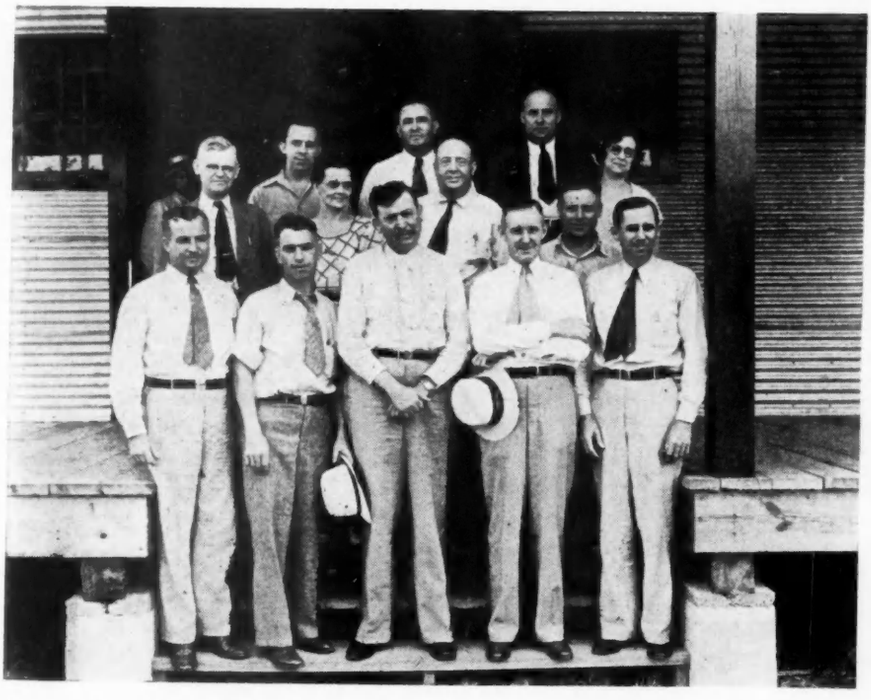
May we send you a working sample?

VELLUMOID

Sheet Packing and Gaskets

The Vellumoid Co., Worcester, Mass.

VELLUMOID

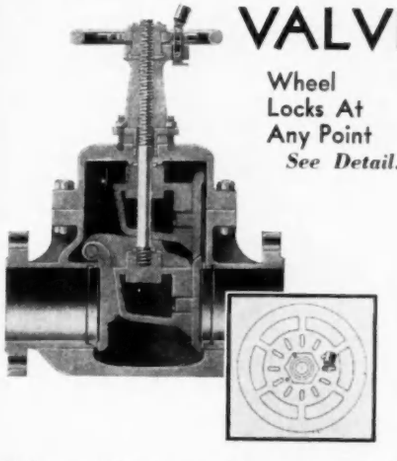


Group of equipment folk in front of Houston Oil Field Material Company's new store at 1524 Maury Street, Houston. Top row, left to right: T. P. Burke, Jeffrey Manufacturing Company; W. M. Garney and Mrs. A. Scowan, Houston Oil Field Material Company; O. B. Beckham, Oil Field Salvage Company; D. M. Griffith; Henry H. Paris, W. C. Norris Manufacturing Company; A. W. Waddell and Mrs. Cleo King, Houston Oil Field Material Company. Bottom row, left to right: officials of Houston Oil Field Material Company, George O'Leary and J. K. Clark, vice presidents; M. (Bink) Manning, president; Robert Ewen, auditor; and J. E. Peters, secretary and treasurer.

COMBINATION

GATE and CHECK VALVE

Wheel Locks At Any Point *See Detail.*



Valves made in cast iron or steel for high or low pressures. Built in sizes from three to sixteen inches. FLANGE, SCREW or WELDING type. Valve acts as gate valve when closed, as swing check when open.

Write for detailed information.

WHEATLEY BROTHERS

Tulsa, Oklahoma

Squeaks *from the* BULL WHEEL

"I understand your wife came from a fine old family."

"Came is hardly the word—she brought it with her."

Spinster—So the waiter says to me, "How would you like your rice?"

Friend—Yes, dearie, go on.

Spinster—So I says wistfully, "Thrown at me, big boy."

Abe's boy, Ikey, was in the outer office when a telegram arrived, and the stenographer called out: "A wire from the salesman, Mr. Bernstein."

"Read it out loud to me," the boss called back from the inner room. So she started:

"Was in Dallas Monday stop be in Houston Wednesday stop be in New Orleans Thursday stop——."

Here Abe interrupted, calling to his son: "Ikey, leave that girl alone and let her read the telegram."

Film Magnate (entering studio)—Who's that fellow over there?

Director—Why, that's Napoleon.

Magnate—Why did you get such a little man to play such an important part?

When a case opened in a London court, recently, the counsel called the plaintiff to the stand, as Sir Ernest Wild tells the story. A small man sitting in the jury box stepped down and took his place on the witness stand.

Asked what he was doing, he replied that he was the plaintiff.

"Then what are you doing on the jury?" demanded the judge.

"My lord, I was summoned to sit on the jury," explained the man, producing the summons.

"But surely," said the judge, "you knew that you could not assist in trying your own case."

"Well, my lord, I did think it was a bit of luck," was the ingenuous reply.

The guest in Room 343 had greatly annoyed all the other hotel guests by jumping and skipping around his room. Finally, the manager objected, and demanded an explanation.

"Well, it's like this. My doctor gave me some medicine for my rheumatism and told me to take it for three nights running, and then skip a night."

"But what does that have to do with all the noise?"

"Well, this happens to be my night for skipping."

Shopkeeper: Don't buy anything from the shop next door today.

His Wife: Why not, dear?

Shopkeeper: They've borrowed our scales.

Pat had been down in the dumps, feeling pretty low, for weeks. Finally he decided to end it all.

Later in the day, the farmer went out to the barn, and found Pat hanging from the rafters with a rope knotted around his waist.

"Well, Pat, if you wanted to commit suicide, why didn't you tie the rope around your neck?" asked his employer.

"Begorra, and Oi tried that, but Oi couldn't git me breath."

"I shall go in the movies and take a pseudonym."

"Then I shall shoot you both!"

Fellow offered me $50 for all my mining stock yesterday.

Did you sell?

No; he would not pay the freight.

"Say, honey, I was nearly bumped off twice today."

"Once would have been enough."

"Women are funny," said an acquaintance. "My wife wouldn't buy anything but a red dress because the saleslady told her it was the color everyone was wearing this spring. And then she wore it to a party and came home mad because everyone else had on the same color."

Why don't you go to work? Don't you know that a rolling stone gathers no moss?

Madam, not to evade your question at all, but merely to obtain information, may I ask of what practical utility is moss to a man like me?

Hard-boiled Grocer: No, sir, no checks! I wouldn't cash a check for my own brother.

Disappointed Customer: Well of course, you know your family better than I do.

Customer: Have you anything for gray hairs?

Concientious Druggist: Nothing, sir, but the greatest respect.

A grinning red-cap at a railroad terminal, submitting to two cuts in salary, recently took a third.

"It's all right," he agreed, "just so they don't begin charging me admission."

Index to Advertisers

Abercrombie Pump Co. 30
American Association of Petroleum Geologists .....
American Brake Materials Corp.....
American Cable Co. 29
American Iron & Machine Co...Third Cover
Axelson Manufacturing Co. .....
Baker Oil Tools, Inc..... 4
Baroid Sales Co. 87
William M. Barret, Inc.....
Big Lake Oil Co..... 87
Bradford Motor Works .....
The Brewster Co. 61
Bridgeport Machine Co. .....
Byron Jackson Co. .....
A. M. Byers Co.....
Cameron Iron Works 86
Chain Belt Co. 75
Columbian Steel Tank Co..... 50
Continental Supply Co. .....
Darling Valve & Manufacturing Co..... 27
E. M. Dart Manufacturing Co.....
De La Vergne Engine Co.....
Diamond Metal Co. 94
Dodge Manufacturing Corp. .....
Engineering Service Corp. 96
Fluid Packed Pump Co. 47
Frick-Reid Supply Corp. .....
Fort Worth Laboratories 96
The Garlock Packing Co. .....
Gaso Pump & Burner Manufacturing Co.
General Electric Co. .....Second Cover
B. F. Goodrich Rubber Co.....36-37
H. P. Gott Manufacturing Co..... 95
The Guiberson Corp. .....
Gulf Publishing Co. 38-93-96
Gulf States Utilities Co.....
Halliburton Oil Well Cementing Co..... 45
Hardway & Cathey 96
Haynes Stellite Co. .....
Hazard Wire Rope Co.....
C. M. Heeter Sons & Co.....
Hirsch, Susman & Westheimer..... 96
Hughes Tool Co. .....Front Cover
Humble Oil & Refining Co..... 30
Houston Ready-Cut House Co..... 89
International Nickel Co..... 49
Byron Jackson Co. .....
Jarecki Manufacturing Co.....
S. M. Jones Co.....
Jones & Laughlin Steel Corp..... 6
Kibele Manufacturing Co. .....
Larkin Packer Co. 83
MacClatchie Manufacturing Co. .....
Martin-Decker Corp. .....
J. H. McEvoy & Co.....
Maloney Tank Manufacturing Co..... 79
F. G. Masquelette & Co. 93
Geo. S. Mepham & Co.....
Miller Sand Pump Co.....
Lee C. Moore & Co. .....
The National Supply Co.....
National Tube Co. .....
Norvell-Wilder Supply Co. 3
Oil Center Tool Co..... 85
Oil Well Supply Co.....35 and 41
Osage Metal Co. 84
The Parkersburg Rig & Reel Co.....20-21
H. L. Patton Co. .....
Pelican Well Tool & Supply Co..... 88
Petroleum Electric Power Clubs..... 65
Petroleum Equipment Co. 84-89-96
Petroleum Rectifying Co. 15
Pittsburgh Steel Co. .....
Rapid Blue Print and Photo Copy Co...
Reading Iron Co. .....
Reed Roller Bit Co..... 51
Regan Forge & Engineering Co.....
The Republic Rubber Co..... 31
Republic Steel Sorp. .....Fourth Cover
The Ruberoid Co. .....
Shell Union Oil Corp.....
Howard Smith Co. 80
South Chester Tube Co.....
Sperry-Sun Well Surveying Co..... 34
Standard Brake Lining Co. .....
Jesse R. Stone and Lester B. Clark.... 96
Texas Iron Works, Inc..... 63
Thermoid Rubber Co. 41
Titusville Iron Works .....
Tretolite Co. .....
Tulsa Camera Record Co.....
Union Wire Rope Co.....
United States Rubber Co.....
The Vellumoid Co. 97
Wheatley Brothers Machine Works.... 97
Whitney Manufacturing Co..... 32
Wickwire-Spencer Steel Co. 25
Williamsport Wire Rope Co. .....
C. K. Williams & Co.....
J. H. Williams & Co. 28
Wilson Supply Co. 52
Wyatt Metal & Boiler Works..... 33
Youngstown Sheet & Tube Co.....

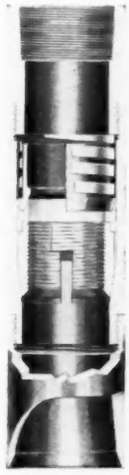
THREE FAMOUS TOOLS

American Flow Packer

Three of the many dependable oil field tools made by American Iron & Machine Works Co., that are famous for their strength, workmanship and Perfect Performance.

No hole too deep, no field too shallow to use this better equipment for safety and economy in Drilling. Fishing or Production.

We'll see you at Booths 420 - 22
OIL EQUIPMENT AND
ENGINEERING EXPOSITION
Convention Hall
Houston, Texas, May 22-28



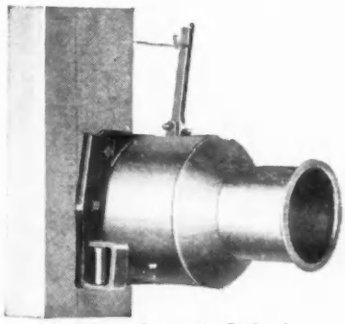
Releasing and Circulating Overshot

AMERICAN FLOW PACKER

Has saved many thousands of dollars for producers by prolonging life of wells.

AMERICAN RELEASING AND CIRCULATING OVERSHOT

Proven through many years to be the outstanding overshot in all oil fields.



American Automatic Cathead

AMERICAN AUTOMATIC CATHEAD

Simplicity and few working parts has increased its popularity and general usage.

JOHN F. CAILLOUX
President, American
Iron & Machine Works Co.

The Conroe plant is under the personal direction of Mr. Cailloux — giving 24 hour service to the Gulf Coast area.

AMERICAN
IRON & MACHINE WORKS CO.

OKLAHOMA CITY, U.S.A.

KILGORE, TEXAS JOINERVILLE, TEXAS CONROE, TEXAS

MANUFACTURERS OF OIL FIELD EQUIPMENT

ENDURO • MEETS EVERY STAINLESS STEEL REQUIREMENT

ENDURO is not one metal, but a complete series of alloys in the stainless group, each developed to meet the needs of a particular class of service.

Chromium contents range from 4 to 30 per cent with or without the alloy addition of nickel, molybdenum, tungsten and other elements. This range permits the selection of the most economical type to meet specific conditions of wet or dry corrosion, elevated temperatures, strength, impact resistance, or required working qualities such as drawing, welding and machining.

Every refinery operator and every manufacturer of refinery equipment should have available for ready reference the information which Republic has compiled on the use of ENDURO in hot and cold oil lines, oil still tubes, tube supports, hangers and sheets, header boxes, return bends, bubble caps and plates, valves, fittings and pumps. Let our experience as the world's oldest and largest manufacturer of alloy steels be your guide in selecting the correct type to meet your operating conditions.

CENTRAL ALLOY DIVISION . . MASSILLON, OHIO

REPUBLIC STEEL CORPORATION

Licensed under Chemical Foundation *Patents Nos. 1316817 and 1339378.*